Utilization of the Port of Churchill: A Saskatchewan Perspective

Prepared for

Saskatchewan Highways and Transportation
Transportation Planning and Research Division

By

SAL Engineering Ltd.
Saskatoon, Saskatchewan

August 1991

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SAL

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August 14th, 1991

Dr. Phil Pearson
Executive Director
Transportation Planning and Research Division
Saskatchewan Highways and Transportation
1855 Victoria Avenue
Regina, Saskatchewan
S4P 3V5

Dear Dr. Pearson,

Re: Utilization of the Port of Churchill: A Saskatchewan Perspective

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Please find attached a copy of the report for the above noted project. This report presents the results of our analysis on the advantages and disadvantages of utilizing the Port of Churchill as an import/export point for Saskatchewan commodities.

We would like to express our appreciation to the many people who provided assistance to us during the course of the study. We would especially like to thank the staff of Saskatchewan Highways and Transportation and officials of the Port of Churchill.

We trust that the information presented in this report will assist the Saskatchewan Government in developing a policy position with respect to the Port of Churchill.

Thanking you,

Yours Truly,

Gordon A. Sparks, P.Eng.

Executive Summary

The Port of Churchill, located at the mouth of the Churchill River on the western shore of Hudson Bay, is Canada's only northern seaport. This port is presently serviced by the Churchill Rail Line which extends from The Pas, Manitoba to Churchill, a total distance of 816 kilometres (see Figure 1). The Port of Churchill currently exports wheat and barley and serves as a resupply terminal for arctic communities. The grain terminal at the Port has a rated maximum storage capacity of 140,000 tonnes or a working storage capacity of approximately 112,000 tonnes. During the past 20 years, grain exports through the Port have ranged from a low of approximately 50,000 tonnes in 1988 to a high of 750,000 tonnes in 1977. Exports during 1990 totalled 395,000 tonnes. Northern resupply cargo volumes have averaged approximately 20,000 tonnes per year over the same period.

The role of the Port of Churchill in terms of it's operation as an export point for agricultural and other commodities is uncertain at the present time. Both the Federal and Provincial governments are currently involved in a review of Agri-Food Policy. Mechanisms to change the payment of the Crow Benefit, the Canadian Wheat Board's price pooling policy and measures to increase efficiency and lower costs in the transportation of agricultural products are all being sought.

If the Churchill Rail Line and the Port of Churchill are to remain as an export point for Canadian grain and other commodities several key investment decisions must be made in terms of rehabilitation of the rail line or operating with specialized equipment. The overall objective of this project was to document the advantages and disadvantages of using the Port of Churchill as a point of import or export for Saskatchewan commodities.

Economics of Shipping Grain Through Churchill

The economics of transporting grain through the Port were studied. This analysis considered the total cost (i.e. from farm gate to foreign port) of exporting grain through the Port of Churchill to the North Atlantic market area, Churchill's traditional market. The cost was then compared to the total cost associated with moving grain via Thunder Bay and the Port of Montreal, Churchill's strongest competitor into this market. The total transportation costs associated with each export route included:

- farm trucking costs,
- primary elevator costs,
- rail freight costs,
- terminal elevator costs,
- lake freight and trans-shipment costs, and
- ocean marine freight costs.

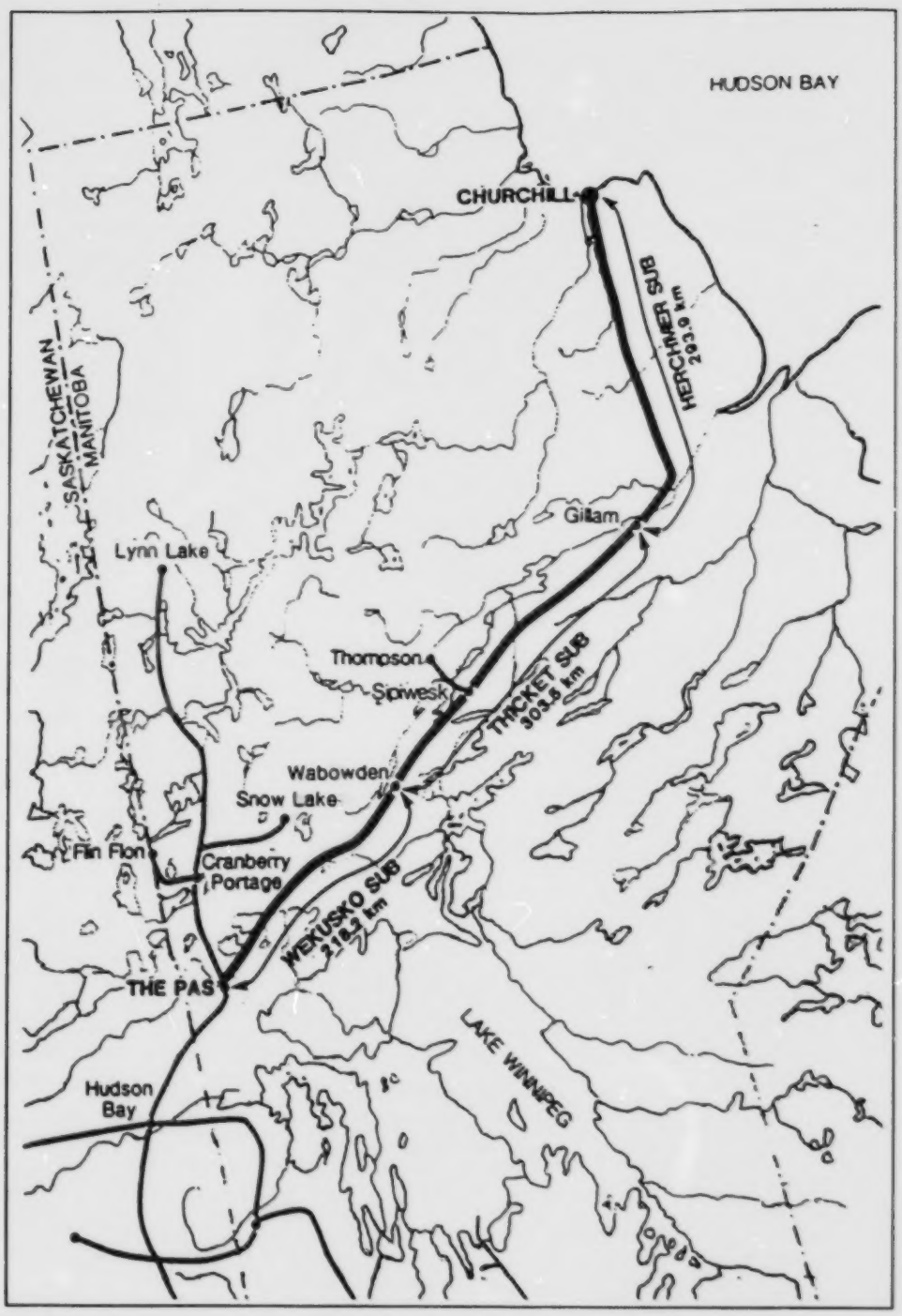


Figure 1
Churchill Rail System
{ after IBI Group (1986)}

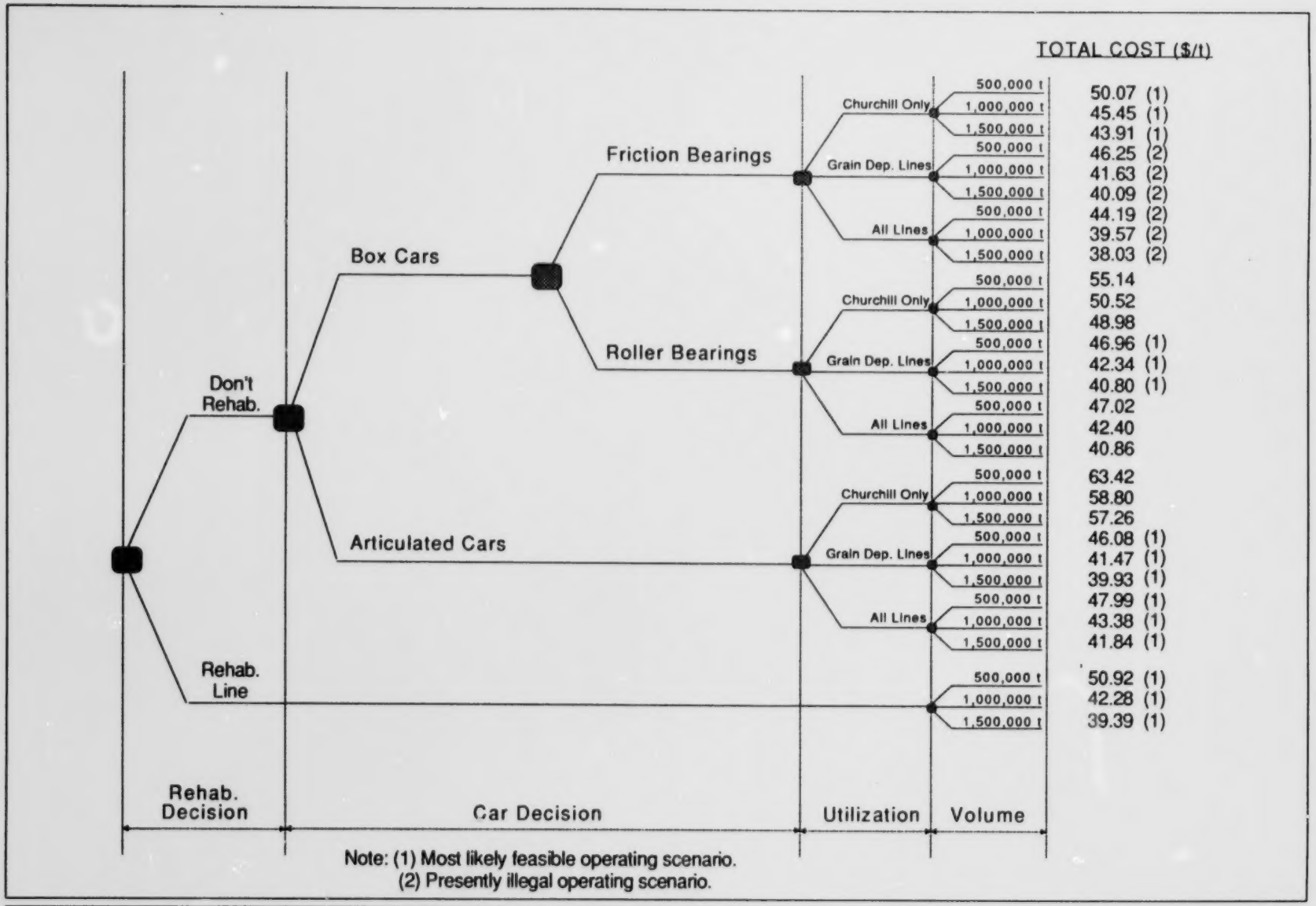
The rail freight cost component was developed as a function of a number of investment alternatives, utilization rates and throughput grain volumes, as summarized in Figure 4 and Figure 5. Rail freight costs included capital costs, operating costs and direct government subsidies. The specific investment alternatives considered included:

- o rehabilitating existing box cars using friction bearings,
- o rehabilitating existing box cars using roller bearings,
- o purchasing new articulated rail cars, and
- o rehabilitating the rail line and using conventional hopper cars.

The total capital and operating cost per tonne for grain shipped through Churchill as a function of the alternatives described above were calculated. These costs were developed as a function of the total annual throughput volume of grain at the Port of Churchill and the utilization of the rail cars when Churchill is not open. It was concluded that the articulated car alternative has the least total rail costs per tonne for throughput volumes less than approximately 1.3 million tonnes per year while the rail line rehabilitation alternative has the lowest total rail cost per tonne at tonnages greater than 1.3 million tonnes per year.

A comparison between the total transportation costs associated with shipping grain through Thunder Bay and Montreal versus Churchill was conducted. The results of the analysis are summarized in Figure 9. The results of the economic analysis indicate that Churchill may be competitive with Thunder Bay (and Montreal) in the North Atlantic market area if the Churchill shipping program can be maintained at volumes approaching one million tonnes per year.

The impact of any economic benefit to the Province of Saskatchewan which may be derived from utilizing the Port of Churchill for shipping grain to the North Atlantic is diluted by two factors. These include the fact that transportation savings associated with grain movements via Churchill are typically shared equally between the buyer and the seller (Canada Grains Council, 1981), and the fact that the Canadian Wheat Board's current price pooling policy insulates individual producers from both extra-ordinary losses and gains. To illustrate, assuming that Churchill had a sustainable $6 per tonne net transportation advantage over Thunder Bay (and Montreal) and that Churchill was exporting 1.4 million tonnes per year, the benefit to Saskatchewan producers would be approximately $2.4 million per year (i.e. 1,400,000 tonnes per year x $6 per tonne savings x 0.5 share for producers x 0.56 share for Saskatchewan producers = $2.4 million per year). This $2.4 million per year would translate into approximately $0.13 per tonne for Saskatchewan producers (assuming an annual average Saskatchewan crop of 18 million tonnes).



Note: (1) Most likely feasible operating scenario.
(2) Presently illegal operating scenario.

Figure 4

Rail Freight Costs (Central Saskatchewan to Churchill)

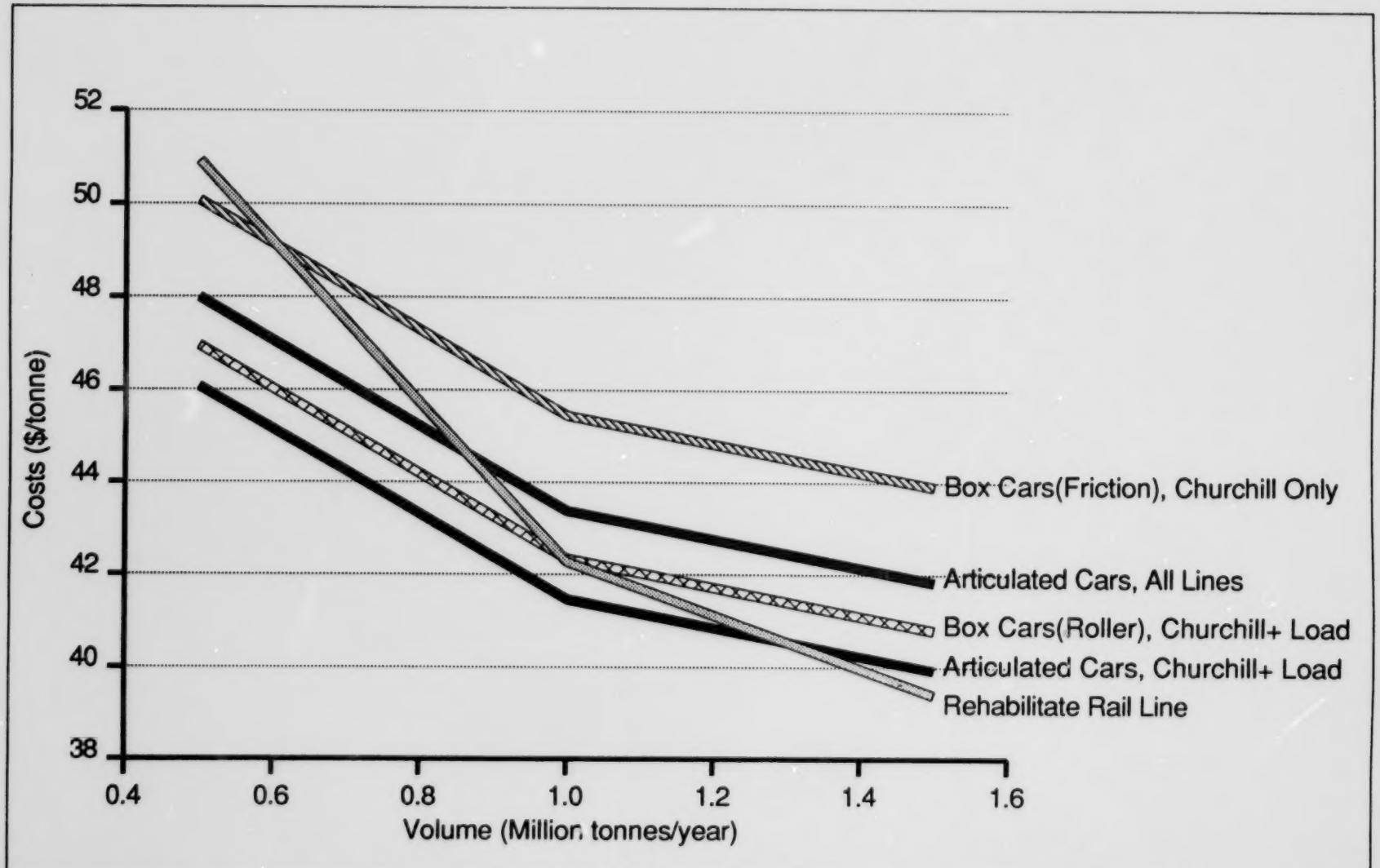


Figure 5
Rail Freight Costs as a Function of Volume
(Central Saskatchewan to Churchill)

Box Car
(Friction Bearings, Car Utilized On Churchill Rail Line Only)

Ocean Marine Market	Costs via Churchill — Throughput (tonnes per year) 500,000	1,000,000	1,500,000	Costs via Thunder Bay
Low	88.40	83.78	82.24	88.45
Medium	96.40	91.78	90.24	91.95
High	108.00	103.38	101.84	101.35

Box Car
(Roller Bearings, Car Utilized On Churchill and Other Load Restricted Lines)

Ocean Marine Market	Costs via Churchill — Throughput (tonnes per year) 500,000	1,000,000	1,500,000	Costs via Thunder Bay
Low	85.29	80.67	79.13	88.45
Medium	93.29	88.67	87.13	91.95
High	104.89	100.27	98.73	101.35

Articulated Car
(Car Utilized On Churchill and Other Load Restricted Lines)

Ocean Marine Market	Costs via Churchill — Throughput (tonnes per year) 500,000	1,000,000	1,500,000	Costs via Thunder Bay
Low	84.41	79.80	78.26	88.45
Medium	92.41	87.80	86.26	91.95
High	104.01	99.40	97.86	101.35

Rehabilitate Rail Line
(Use Conventional Hopper Cars)

Ocean Marine Market	Costs via Churchill — Throughput (tonnes per year) 500,000	1,000,000	1,500,000	Costs via Thunder Bay
Low	89.25	80.61	77.72	88.45
Medium	97.25	88.61	85.72	91.95
High	108.85	100.21	97.32	101.35

NOTE: **Shaded areas indicate scenario where Churchill has a cost advantage.**

Figure 9
Matrix Illustrating Comparison in Total Transportation Costs ($/tonne)
Churchill Versus Thunder Bay (Montreal)

Logistics of Shipping Grain Through Churchill

The maximum volume of grain that can be shipped via the Port of Churchill is a function of the demand for Canadian grain in the North Atlantic, the supply of grain within Churchill's contributing shed area and the capacity of the transportation system in moving grain from prairie elevators to Churchill and from Churchill to market.

From a comparison of the logistics of demand, supply and transportation capacity for the Port of Churchill it was concluded that the current constraint on the annual tonnages available to transport through the Port of Churchill is the supply of grain. Supply currently restricts the throughput of the Port to approximately 850,000 tonnes per year.

There are several changes to the terminal operations and the railway that could be implemented to improve the logistics of shipping grain through Churchill. These improvements are illustrated in Figure 13 and summarized below.

- The shipping season at Churchill could be extended. The IBI Group (1986) recommended that Churchill's shipping season be extended from 12 weeks (July 26 to October 18) as presently exists to 17 weeks (July 20 to November 15). Extending the shipping season would result in a 40% (i.e. 17/12) increase in the available grain supply, grain demand and the transportation capacity for the Port of Churchill. Given this change was made, supply would still be the constraint, but the maximum throughput of the Port would increase to approximately 1.2 million tonnes per year.

- A CN/CP car interchange agreement could be negotiated. This would theoretically double the amount of grain available within Churchill's rail rate advantage area. Doubling the supply of grain would make transportation capacity, in particular terminal capacity at Churchill, the limiting constraint at an estimated throughput of approximately 1.25 million tonnes per year and assuming a single shift as presently exists.

- The terminal at Churchill could implement a 24 hour per day operating schedule. It is estimated that the capacity of the terminal could approach 2 million tonnes per year under this scenario. This appears to be the feasible upper limit on terminal throughput capacity without significant capital expenditures.

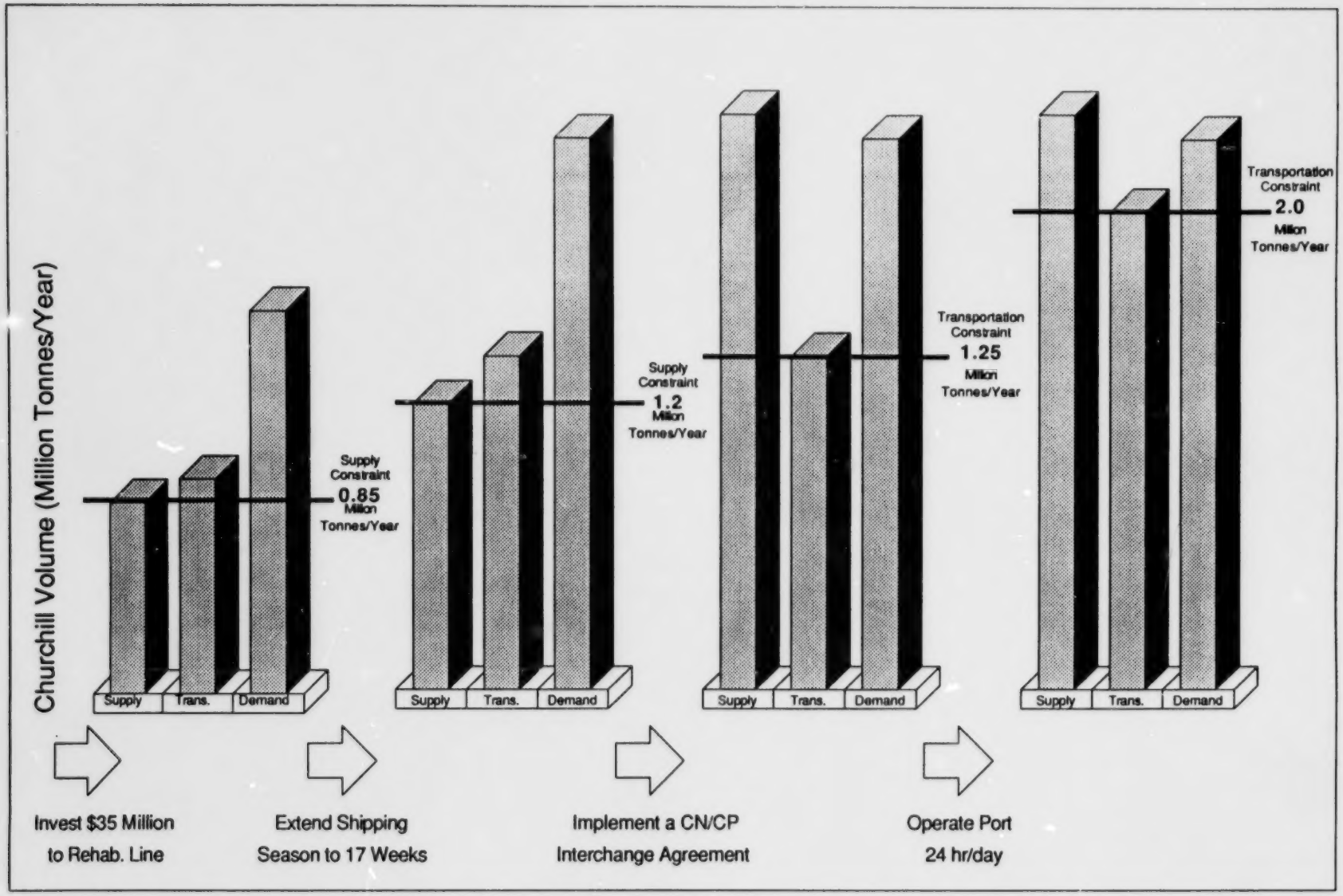

Churchill Volume (Million Tonnes/Year)
Supply
Trans.
Demand
Supply Constraint 0.85 Million Tonnes/Year
Supply Constraint 1.2 Million Tonnes/Year
Transportation Constraint 1.25 Million Tonnes/Year
Transportation Constraint 2.0 Million Tonnes/Year
Invest $35 Million to Rehab. Line
Extend Shipping Season to 17 Weeks
Implement a CN/CP Interchange Agreement
Operate Port 24 hr/day

Figure 13

Changes That Could Increase Port of Churchill's Throughput Volumes

Price Pooling Policies

Price pooling is conducted by the Canadian Wheat Board (CWB) on the transportation costs involved in moving Canadian grain to market. The objective of price pooling is to equalize the farmgate value of grain across the prairies. The CWB's current price pooling policy is presently being reviewed with two alternative price pooling policies being considered. These two proposals, which included the CWB proposal and the National Grains Bureau (NGB) proposal, were evaluated in this report. The implication of both of these proposals on grain transportation costs paid by Saskatchewan producers and the effect of including Churchill as a pooling point were calculated. These costs are summarized in Figure 14.

Based on the results of this analysis it was concluded that implementing either the CWB Proposal or the NGB proposal would not affect the utilization of the Port of Churchill. The Canadian Wheat Board conducts pooling in an attempt to equalize the farmgate value of grain. Pooling does not affect, or reflect, the actual cost of moving grain and as such it does not influence the decision to route grain through any particular port, and therefore, can not influence the utilization of the Port of Churchill.

Although changing the pooling policy will not affect the utilization of Churchill it will impact the net return to producers. Because of the re-allocation of the transportation costs charged to producers, Manitoba and Saskatchewan will experience a decline in net returns while Alberta will experience an increase in net returns.

To mitigate against the negative impact that Saskatchewan producers are likely to experience under either price pooling proposal, Saskatchewan could advocate the adoption of Churchill as a pooling point. If the CWB proposal were adopted Saskatchewan producers would incur a cost increase of approximately $66,000 over existing costs. However, if the CWB proposal is adopted and Churchill was made a pooling point Saskatchewan would incur a cost decrease of approximately $630,000 per year relative to existing costs. If the NGB proposal were adopted it is estimated that Saskatchewan would incur an extra cost of approximately $4.9 million per year over existing costs while including Churchill would result in a cost increase of approximately $4.4 million per year over existing costs.

	Million Dollars/Year				
	Cost Paid Directly	Pooled Costs	Total Costs Paid	Change From Current Policy	Change Including Churchill
Current policy	206.82	345.55	552.37	NA	
CWB proposal	232.40	320.04	552.44	0.07	-0.70
CWB proposal (with Churchill)	229.90	321.84	551.74	-0.63	
NGB proposal	331.29	226.00	557.29	4.92	-0.50
NGB proposal (with Churchill)	329.92	226.87	556.79	4.42	

* 1987 data
* 1987 freight regime
* crop district basis

Figure 14
The Impact on Saskatchewan of Changing the Canadian Wheat Board's Price Pooling Policy

Inland Grain Terminals

As part of the rationalization of the grain transportation and handling system several new, large capacity inland grain terminals are proposed to be built in Wadena and Moosomin. It was concluded that these proposed inland grain terminals will have a positive impact on the logistics of using the Port of Churchill since these inland terminals will help to alleviate Churchill's current problems associated with sourcing large amounts of a single grade of grain. These terminals will be capable of cleaning grain (therefore reducing the amount of grain that the Churchill terminal has to clean) plus these inland terminals will make more efficient use of the Churchill's rail car fleet.

While the potential impact of these inland grain terminals on the logistics of Churchill is expected to be positive, it was estimated that the amount of grain that they contribute to the Churchill shipping program is not likely to be large enough to create an impetus for increased utilization of the Port of Churchill. The potential contribution of the two terminals is limited by the total throughput of the terminals, the length of the Churchill shipping season and the percentage of the grain throughput that is allocated to Churchill. Assuming that the storage capacity of both terminals is devoted to the three grades of grain shipped through Churchill it is estimated that the two terminals could contribute from 35,000 to 214,000 tonnes per year to Churchill's shipping program, with an average expected value of 90,000 tonnes per year. The 90,000 tonnes per year translates into approximately 6.5% of Churchill's expected annual volume, assuming at 1.4 million tonne per year shipping program.

The construction of the inland grain terminals at Moosomin and Wadena will not change Churchill's economic competitive position relative to Thunder Bay and Montreal. The inland terminals are a common element to both ports. Therefore, any economic benefit that may be derived from the new inland grain terminals could potentially benefit either port and the net economic competitive position of the two ports will remain unchanged.

Churchill Rail Line as a Short Line Railway

An order of magnitude costing exercise related to restructuring the Churchill rail line as a short line railway was conducted. Based on this analysis it was determined that at the one million tonnes per year level the short line would incur total costs in the order of $7.3 per tonne. Adjusting this figure to reflect the cost of rehabilitating the rail line (approximately $4.0 per tonne) and extraneous line maintenance costs (approximately $1.2 per tonne) the adjusted total cost was estimated to be approximately $12.5 per tonne. This cost was compared against two revenue estimates which bounded the range of expected revenues. From this comparison it appears that the short line may be marginally viable. However, the viability of the short line, like the viability of the current Class 1 operation, is highly dependent on volume. The short line would require volumes approaching one million tonnes per year before it has a reasonable chance of success.

Additional Commodities

Although the operation of the Port of Churchill can be justified on the basis of exporting grain alone, any other commodities that could be economically exported through the Port would serve to lower the unit cost of shipping grain by spreading the fixed costs of the rail line and the Port over greater volumes and would diversify and secure the continued operation of the Port.

No additional Saskatchewan commodities that could economically utilize Churchill were identified. Although Saskatchewan does produce some commodities which are traded in the markets where Churchill has a distance advantage, all were disqualified due to unfavourable economics and other criteria.

Tourism

A review of the relevant literature did not reveal any significant tourism opportunities at Churchill. It was further concluded that even if tourism opportunities did exist, or were developed in the future, the benefit derived by Saskatchewan from these opportunities would be minimal.

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Chapter One: Introduction[1]

1.1 Background

The Port of Churchill, located at the mouth of the Churchill River on the western shore of Hudson Bay, is Canada's only northern seaport. This port is presently serviced by the Churchill Rail Line which extends from The Pas, Manitoba to Churchill, a total distance of 816 kilometres. The location of the Port of Churchill and the Churchill Rail Line are illustrated in Figure 1.

The Port of Churchill currently exports wheat and barley and serves as a resupply terminal for arctic communities. As illustrated in Figure 2, the Port has five berths. Berths "No. 1", "No. 2" and "No. 3" are used for grain while the "Dalgliesh" berth is used for northern resupply and the "Wolf" berth is used for docking small work boats. The grain terminal at the Port has a rated maximum storage capacity of 140,000 tonnes or a working storage capacity of approximately 112,000 tonnes. During the past 20 years, grain exports through the Port have ranged from a low of approximately 50,000 tonnes in 1988 to a high of 750,000 tonnes in 1977. Exports during 1990 totalled 395,000 tonnes. Northern resupply cargo volumes have averaged approximately 20,000 tonnes per year over the same period.

The Churchill Rail Line was originally constructed in 1929. Much of this line was constructed over permafrost. This permafrost ranges from isolated and sporadic on the southern portions to continuous on the northern portions. Although the track was upgraded from 80 pound to 100 pound rail in the early 1980's, the track has experienced severe differential settlement due to the formation of "sink holes" which are caused by progressive thawing within the discontinuous permafrost zone. The severity of the differential settlement and the resulting weight restrictions on the line has lead to the exclusive use of boxcars on the Churchill line. However, boxcars are currently in short supply and their numbers continue to dwindle.

In addition to the line related problems, utilization of the Port of Churchill has also suffered due to the shift in the primary markets of Canadian grain away from Europe, where Churchill has historically enjoyed an economic advantage, toward the Pacific Rim. The majority of Pacific Rim exports are exported via west coast ports.

The role of the Port of Churchill in terms of it's operation as an export point for agricultural and other commodities is uncertain at the present time. Both the

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[1] Project Terms of Reference, Saskatchewan Highways and Transportation, December 1990.

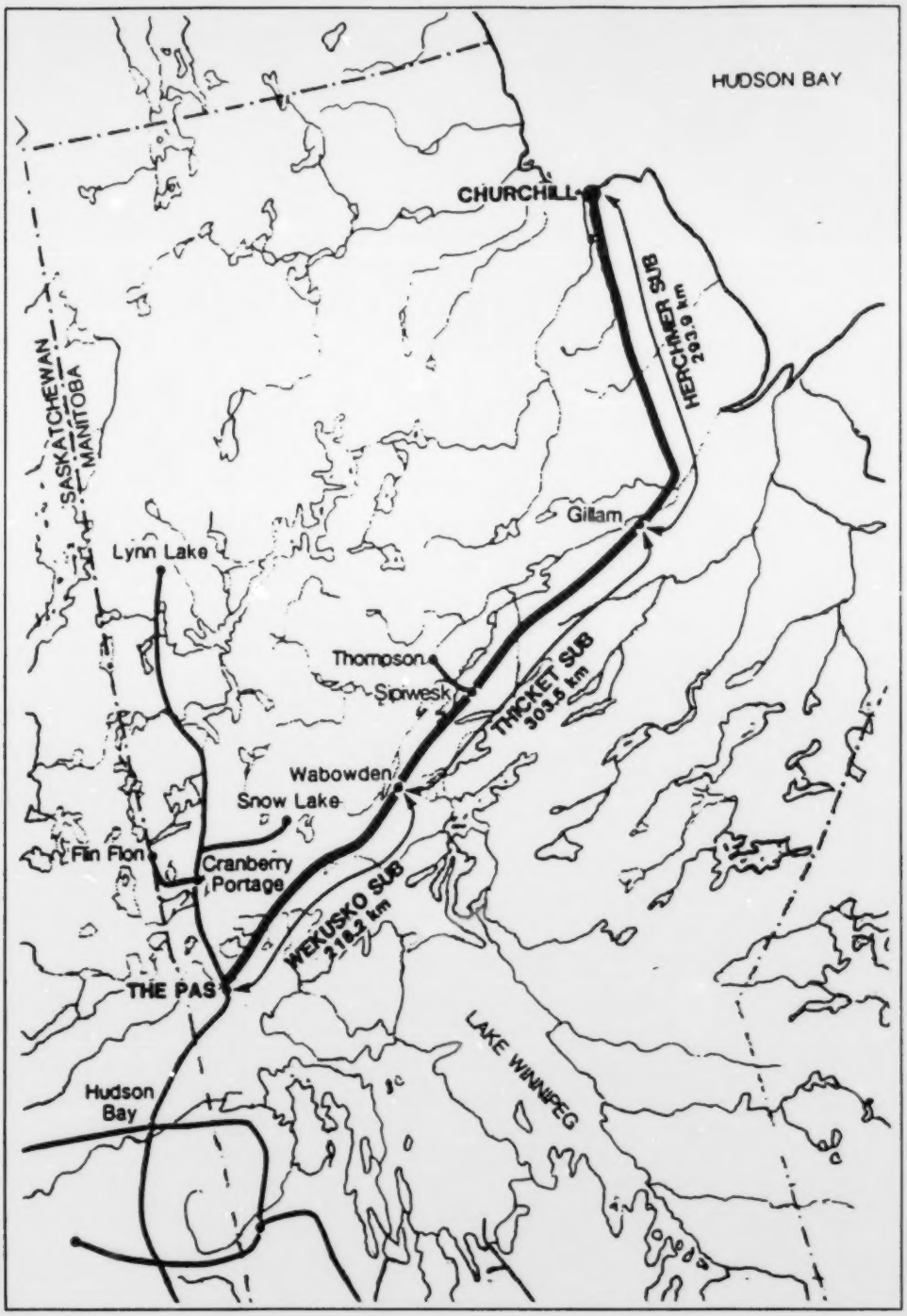

Figure 1
Churchill Rail System
{ after IBI Group (1986)}

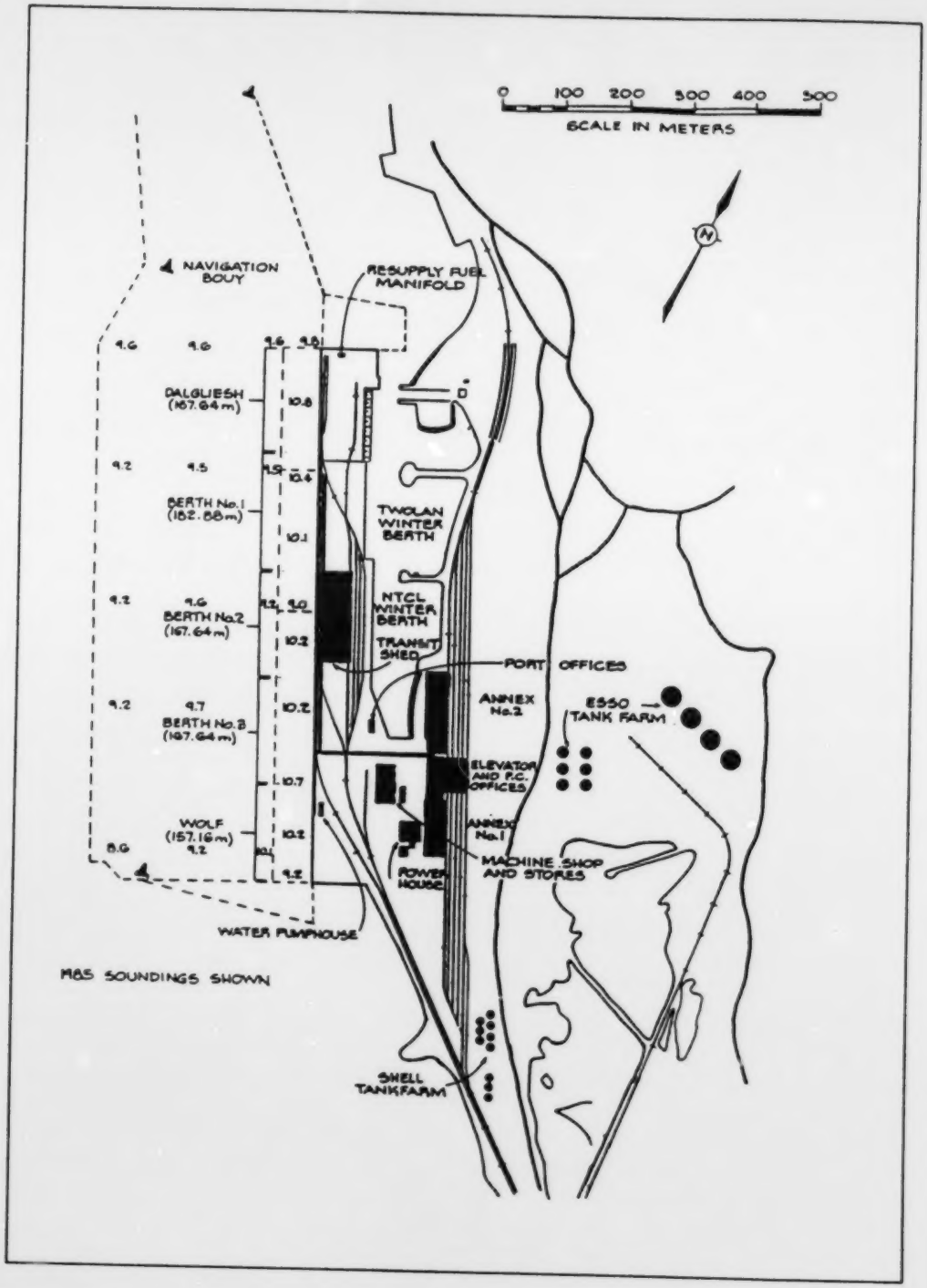

Figure 2
Configuration of the Port of Churchill
{After IBI Group (1986)}

Federal and Provincial governments are currently involved in a review of Agri-Food Policy. Mechanisms to change the payment of the Crow Benefit, the Canadian Wheat Board's price pooling policy and measures to increase efficiency and lower costs in the transportation of agricultural products are all being sought.

If the rail line and the Port of Churchill are to remain as an export point for Canadian grain and other commodities several key investment decisions must be made in terms of rehabilitation of the rail line or operating with specialized equipment.

In December of 1990 Saskatchewan Highways and Transportation commissioned SAL Engineering Limited to investigate the future viability of exporting and/or importing Saskatchewan commodities through the Port of Churchill. This report presents the findings of this project.

1.2 Objectives

The overall objective of this project was to document the advantages and disadvantages of using the Port of Churchill as a point of import or export for Saskatchewan commodities.

The specific objectives of this project were to:

- review and update the reports prepared by the IBI Group for the Government of Manitoba[2] with respect to the market analysis on additional (Saskatchewan) commodities,
- estimate the impact of the proposed changes to the Canadian Wheat Board's price pooling policy and what effect these changes will have on the utilization of the Port of Churchill for Saskatchewan grain exports,
- estimate the potential impact of the proposed inland grain terminals at Moosomin and Wadena on the utilization of the Port of Churchill,
- estimate the costs and benefits of restructuring the Churchill Rail Line, north of Thompson, Manitoba, as a short line, and
- identify and qualify any Saskatchewan benefits that may be derived from tourism opportunities at Churchill.

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[2] "Port of Churchill, Studies A, B, C and D", prepared for Transport Canada and Manitoba Highways and Transportation by the IBI Group, March 1986.

1.3 Layout of the Report

The project report is divided into four chapters. The first chapter summarizes the background information, the objectives, and the layout of the report. The second chapter of the report presents the economics and logistics of shipping grain through the Port of Churchill. This analysis is conducted from a Saskatchewan perspective and assesses whether the Port is economically viable if grain is it's only export. The third chapter of this report addresses the five specific research objectives as outlined in above. The fourth chapter presents the conclusions of the project.

Chapter Two: Exporting Grain Through the Port of Churchill

The viability of exporting grain through the Port of Churchill is a function of both the economics and the logistics of grain movements. The economics and logistics of exporting grain via the Port of Churchill are discussed in this chapter.

2.1 Economics

The economic analysis conducted for this project considered the total cost (i.e. from farm gate to foreign port) of exporting grain through the Port of Churchill to Churchill's traditional market area. From Figure 3 it is observed that grain exported via Churchill moves mainly to the North Atlantic market area. The cost of moving grain into the North Atlantic market area via Churchill was then compared to the total cost associated with moving grain via Thunder Bay and the Port of Montreal, Churchill's strongest competitor into this market.

The analysis was conducted on data available for the 1989/90 crop year. The Port of Rotterdam, Netherlands is used as a proxy to represent all sales to the North Atlantic market area. It is also assumed that all Thunder Bay shipments are transported by laker to the Port of Montreal where the grain is transferred onto ocean-going vessels for shipment to the Port of Rotterdam.

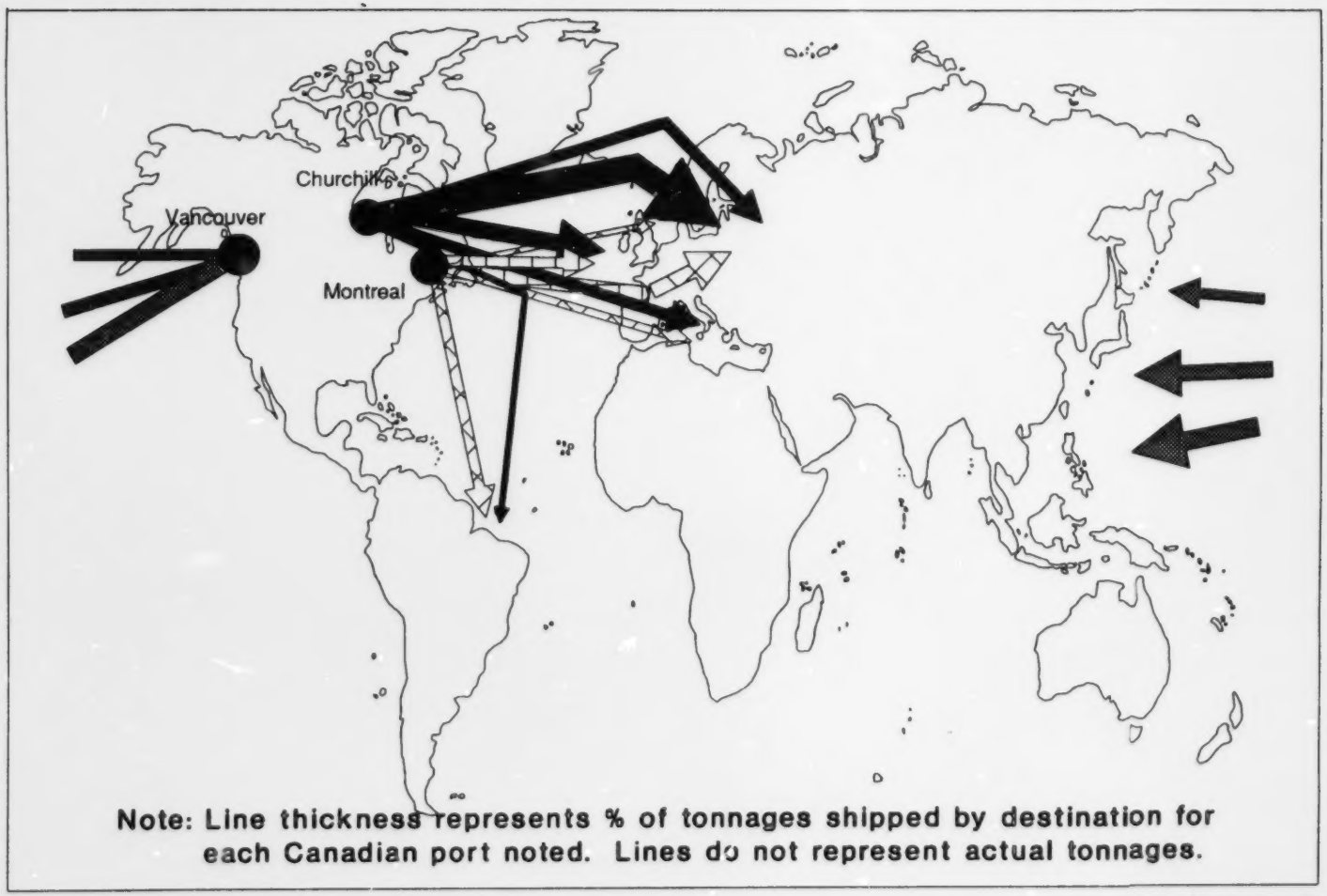
The total transportation costs associated with each export route included six cost components. These components include:

- farm trucking costs,
- primary elevator costs,
- rail freight costs,
- terminal elevator costs,
- lake freight and trans-shipment costs, and
- ocean marine freight costs.

Additional details on the economic analysis conducted on the two grain movements are provided in Appendix A.

2.1.1 Farm Trucking Costs

Farm trucking costs include the cost incurred by a farmer in moving grain from the farm to the elevator. An estimate of $6.11 per tonne for farm trucking costs was obtained from Alberta Agriculture. This figure assumes the producer is using a 12 tonne truck hauling an average distance of 10 miles (Wilson et. al., 1990). These costs are common to all overseas shipments, regardless of the export point.



Note: Line thickness represents % of tonnages shipped by destination for each Canadian port noted. Lines do not represent actual tonnages.

Figure 3
Market Areas for Canadian Ports

However, they have been included in the comparison so that the total cost for each export movement reflects the full transportation costs of exporting grain.

2.1.2 Primary Elevator Costs

Primary elevator costs include elevation and dockage, but do not include shrinkage and carrying charges. As with farm trucking costs these costs are common to all overseas shipments regardless of export point. An estimate of $9.31 per tonne for primary elevator charges was obtained from the Canadian Grains Council (1990).

2.1.3 Rail Freight Costs

The total rail freight costs for a shipment from Saskatoon to the Port of Churchill are summarized in Figure 4. As noted, rail freight costs were developed as a function of a number of investment alternatives, utilization rates and grain volumes. Rail freight costs included the capital costs associated with each investment alternative, rail operating costs and direct government subsidies.

2.1.3.1 Line and Car Related Capital Costs

As noted in the introduction, the Churchill Rail Line is, in part, constructed over discontinuous permafrost. Within this zone of discontinuous permafrost, active sink holes have formed causing differential settlements in the rail bed. The active nature of the sink holes makes them an ongoing maintenance problem.

Sink holes create two operational problems. First, at the present time conventional hopper cars can not be used on the line because their longer wheel base makes them susceptible to resonant frequency swaying when they pass over a sink hole, thus risking derailment. Second, car loadings must be restricted in order to reduce line settlement. These two problems have necessitated the exclusive use of boxcars on the Churchill line. There is, however, a serious shortage of boxcars available for the Churchill movement[3] at the present time. If the Port of Churchill is to be utilized in the future a decision must be made to either upgrade the rail line and thus utilize conventional hopper cars or continue to utilize specialized equipment. The specific investment alternatives considered in this report include:

- rehabilitate the existing box cars using friction bearings,
- rehabilitate the existing box cars using roller bearings,
- purchase new articulated rail cars, and
- rehabilitate the rail line and use conventional hopper cars.

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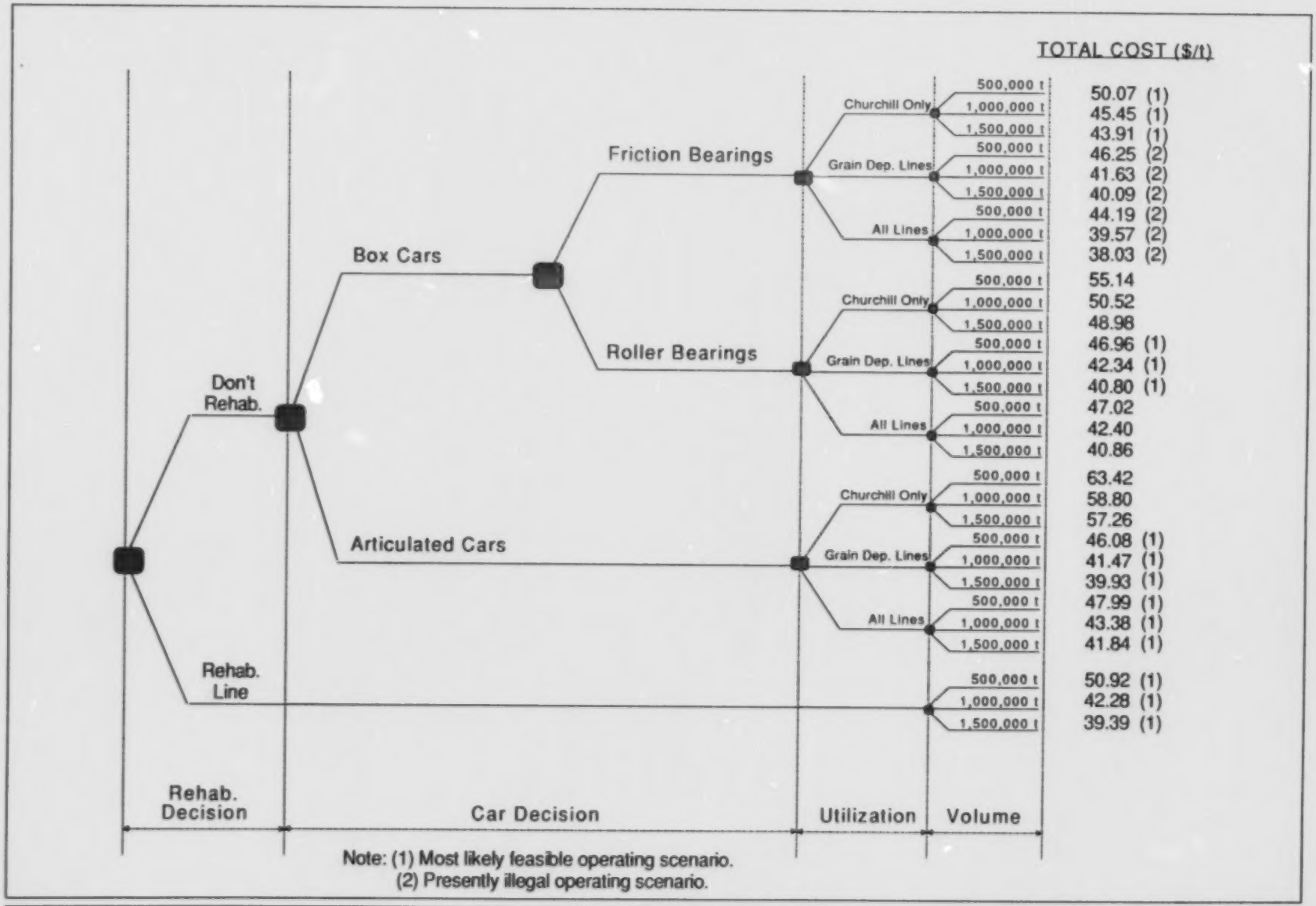
[3] The current 1990/91 estimate of available boxcars is 3000. This is enough cars to facilitate a Churchill shipping program of approximately 750,000 tonnes.



Note: (1) Most likely feasible operating scenario.
(2) Presently illegal operating scenario.

Figure 4

Rail Freight Costs (Central Saskatchewan to Churchill)

The total capital cost per tonne of grain shipped through Churchill for each alternative was calculated. These costs were developed as a function of the total annual volume of grain shipped through the Port of Churchill, and the utilization of the rail cars when Churchill is not open[4]. Additional details are available in Appendix A.

2.1.3.2 Subsidies

Subsidies are paid on the Churchill Rail Line for the section of track extending from Thompson to Churchill (see Figure 1). These subsidies are as follows.

- Subsidies are paid on the section of line extending from Thompson to Gilliam since Canadian National Railway (CN) is permitted to claim losses on this section of the line because it has been declared a "protected line". IBI (1986) estimated that CN's claim was approximately $1,657,000 in 1985/86.

- Subsides are paid on the Herchmer Subdivision (Gilliam to Churchill) since this section has been declared a grain dependent branch line and as such CN is entitled to a subsidy. IBI (1986) estimated that this subsidy totalled $2,281,000 in 1985/86.

- A payment of $680,000 was paid out of WGTA funds in 1985/86 for the rail line extending from Thompson to Churchill. This subsidy is paid to cover the line related costs above those of other "grain dependent branch lines" (IBI, 1986).

The total subsidies paid on the Churchill rail line in 1985/86 totalled approximately $4,618,000. These totals continually fluctuate and for the purpose of this analysis this total was assumed to be an appropriate average and thus was not adjusted to 1990 dollars.

2.1.3.3 Line Related Operating Costs

Rail freight operating costs were based on the full published WGTA rates for 1990. These rates were modified to account for the increased operating costs associated with specialized equipment (ie. box cars and articulated rail cars).

2.1.3.4 Total Rail Freight Costs

Combining the cost components of the various investment alternatives results in the decision tree given in Figure 4. Graphing the per tonne rail costs for the

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[4] It was assumed that the Port of Churchill would remain open for grain shipments for 12 weeks per year.

most likely operating scenarios, as a function of the size of the Churchill shipping program, results in the graph shown in Figure 5. From Figure 5 it is concluded that the articulated car alternative has the least total rail costs per tonne for volumes less than approximately 1.3 million tonnes per year while the rail line rehabilitation alternative has the lowest total rail cost per tonne at tonnages greater than 1.3 million tonnes per year.

2.1.4 Terminal Elevator Costs

The terminal elevator is defined as the elevator at the terminus of the rail line. For shipments to the North Atlantic market area via Churchill the terminal elevator is located at the Port of Churchill. For shipments moving via Thunder Bay and Montreal the terminal elevator is located at Thunder Bay. Terminal elevator charges include elevation, superintendence, brokerage, inspection and weighing, and storage. The IBI Group (1986) estimated that the terminal elevator charges at Churchill where approximately $1 per tonne higher than other major Canadian ports due to the higher energy and labour costs at Churchill. The Canadian Grains Council (1990) estimated the terminal elevation charges at Thunder Bay were $6.61 per tonne in 1990. The terminal elevation charges at Churchill were thus calculated to be approximately $7.71 per tonne for 1990.

2.1.5 Laker and Trans-shipment Costs

Laker and trans-shipment costs apply only to grain movements via Thunder Bay. Laker costs include freight, brokerage, insurance, tolls and inward elevation into the transfer elevator. The Canada Grains Council (1990) estimated the laker costs to be approximately $16.60 per tonne in 1990. Trans-shipment costs include elevation, weighing and inspection, superintendence, brokerage, and storage. The Canada Grains Council (1990) estimated the trans-shipment costs to be approximately $3.58 per tonne in 1990.

2.1.6 Ocean Marine Freight Charges

Ocean marine freight charges utilized in this analysis were based on voyage charter rates to Northwestern Europe. A voyage charter rate is an all-inclusive market rate charged to the shipper for a single, one-way trip. Most of the non-Eastern Bloc shipments through Churchill are transacted on a voyage charter agreement.

Ocean marine freight rates are very volatile. Figure 6 illustrates the variability in the weekly general freight charter index for 1974 to 1984. As the ocean marine freight markets changes so also does the relative cost of shipping grain via Churchill compared to Thunder Bay (Montreal). In a strong ocean marine freight market (ie. high freight rate) there is a shortage of vessels. The difference in the

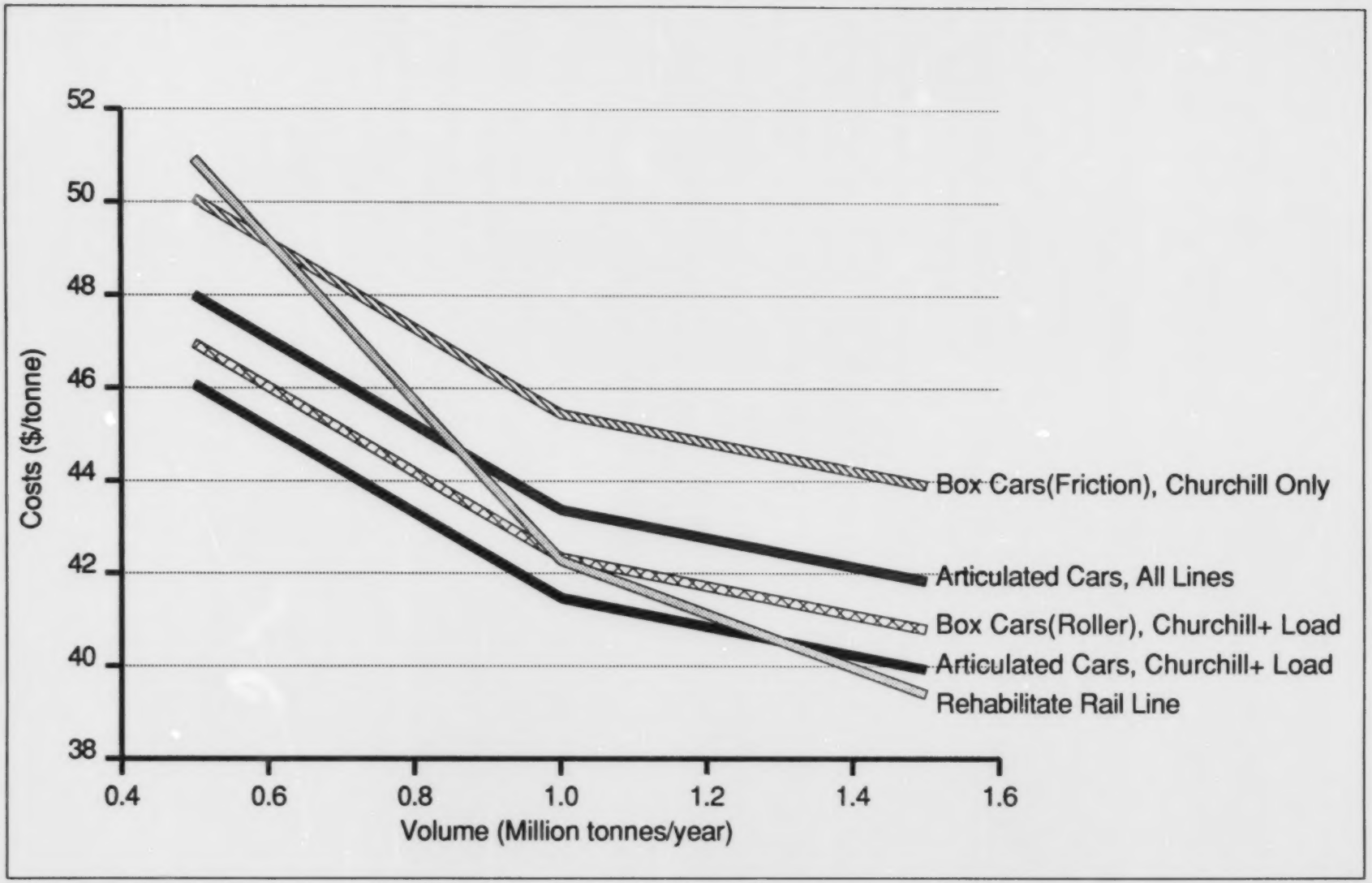


Figure 5
Rail Freight Costs as a Function of Volume
(Central Saskatchewan to Churchill)

Figure 6

Weekly General Freight Charter Index: 1974-1984

[After Maritime Research Incorporated (1984)]

ocean freight rate for shipments headed to the North Atlantic market area via Churchill versus Montreal is large, upwards of $11 per tonne. In a weak ocean marine freight market (ie. low freight rate) there is an overabundance of vessels. The difference between the ports is small, approximately $4 per tonne. The change in the relative costs of the two ports occurs because in a weak market shipping companies are "hungry" for work and thus more willing to accept shipping contracts to less desirable ports such as Churchill.

The approach taken in this analysis was to compute Churchill's relative economic competitive advantage under various ocean marine freight market scenarios. To this end high, medium and low estimates of the ocean marine freight rates were developed based on years where the market was deemed to be high (i.e. 1980), medium (i.e. 1981) and low (i.e. 1985). Figure 7 illustrates the ocean marine freight rates for shipments headed to Northwest Europe via the Ports of Churchill and Montreal for various market conditions.

2.1.7 Total Transportation Costs

A comparison between the total transportation costs associated with shipping grain through Montreal versus Churchill was conducted. The results of the analysis are summarized in the decision tree illustrated in Figure 8. The analysis was conducted as a function of the ocean marine freight market (i.e. high, medium and low freight rates), the Churchill shipping program size (i.e. 500,000 tonnes per year; 1,000,000 tonnes per year; and 1,500,000 tonnes per year) and the investment alternatives (i.e. rehabilitate box cars with friction bearings, rehabilitate box cars with roller bearings, utilize new articulated hopper cars and rehabilitate the line and use conventional hopper cars.

2.1.8 Conclusions

The results of the economic analysis indicate that Churchill may be competitive with Thunder Bay in the North Atlantic market area, independent of the state of the ocean marine freight market, if the Churchill shipping program can be maintained at volumes approaching one million tonnes per year. Churchill may also be competitive assuming a smaller shipping program (i.e. 500,000 tonnes per year) if either the boxcars are rehabilitated or new articulated rail cars are purchased and these cars are utilized throughout the year on other load restricted lines. A summary of the scenarios under which Churchill is competitive with Thunder Bay is presented in Figure 9.

It is noted that the decision as to which investment alternative should be selected should not be based solely on the lowest unit cost criteria. Other considerations such as the capital cost and long-term flexibility should also be considered.

In this regard the capital cost requirements for each investment alternative are

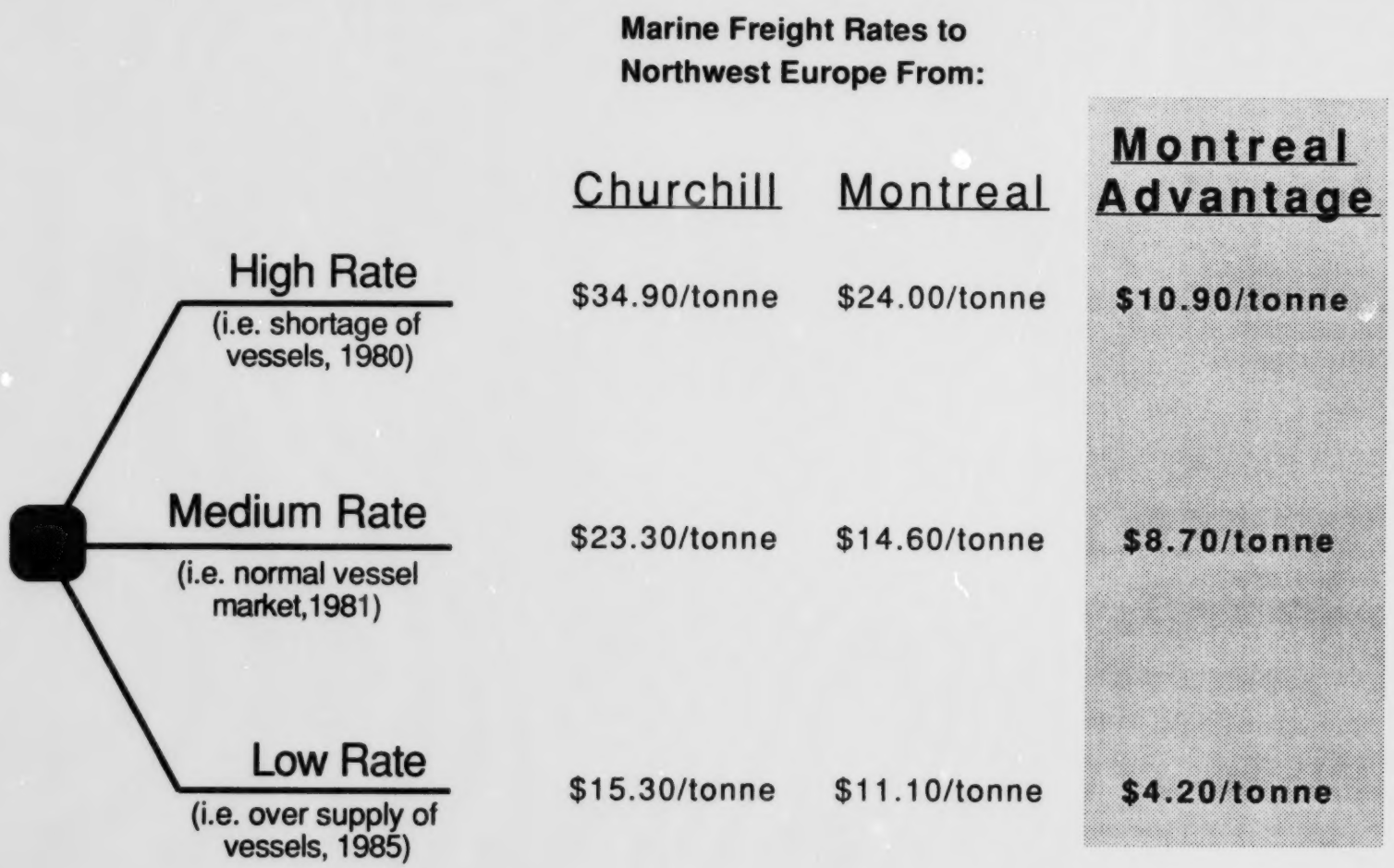
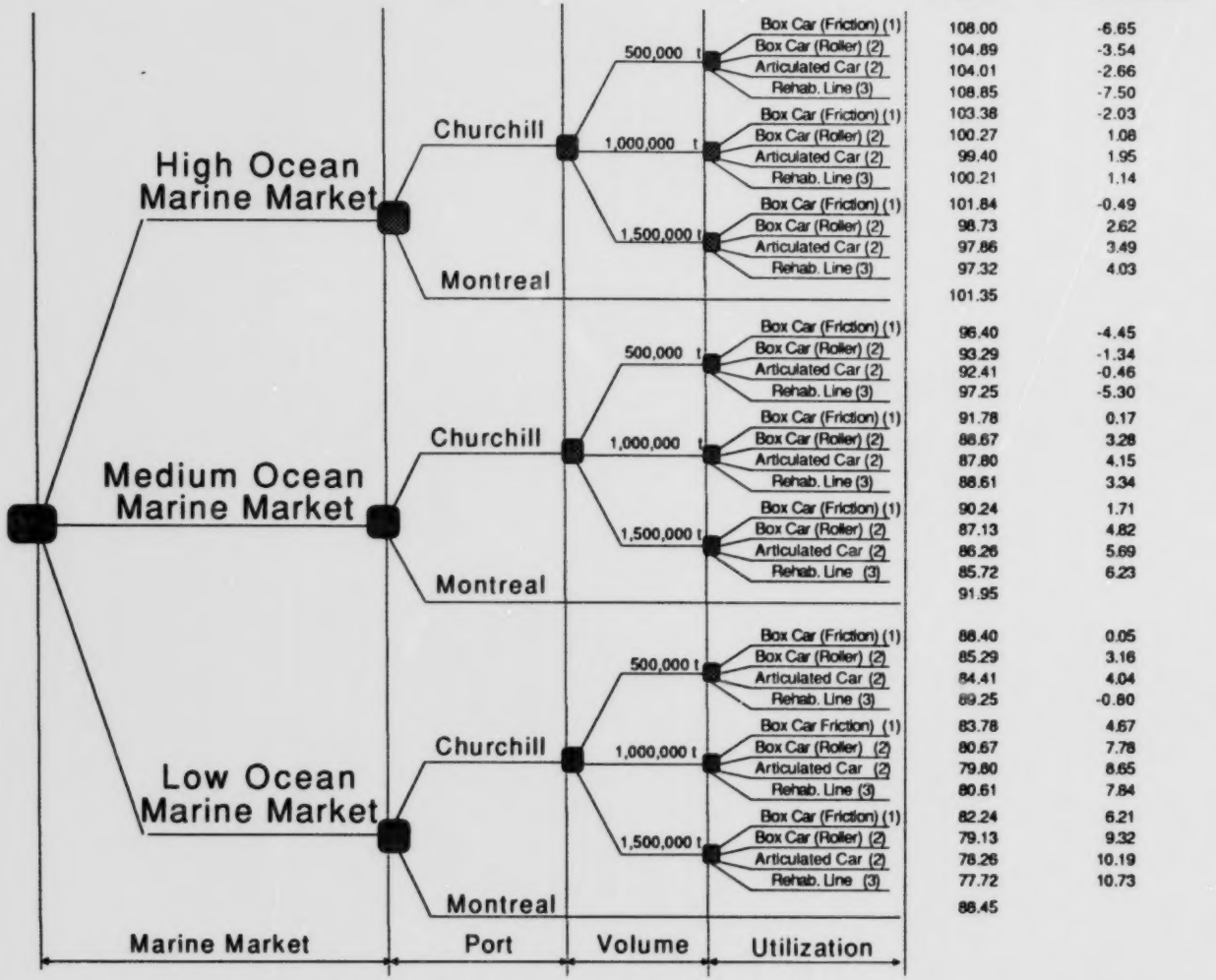


Figure 7

Ocean Marine Freight Rates



Note: (1) Costs assume box car utilized on the Churchill Rail Line only
(2) Costs assume rail car utilized on the Churchill Rail Line and other load restricted linees.
(3) Costs assume Churchill Rail Line is rehabilitated and conventional hopper cars are utilized.

Figure 8
Comparison of Total Transportation Costs (Central Saskatchewan to the North Atlantic) via Churchill and Montreal

Box Car
(Friction Bearings, Car Utilized On Churchill Rail Line Only)

Ocean Marine Market	Costs via Churchill — Throughput (tonnes per year) 500,000	1,000,000	1,500,000	Costs via Thunder Bay
Low	88.40	83.78	82.24	88.45
Medium	96.40	91.78	90.24	91.95
High	108.00	103.38	101.84	101.35

Box Car
(Roller Bearings, Car Utilized On Churchill and Other Load Restricted Lines)

Ocean Marine Market	Costs via Churchill — Throughput (tonnes per year) 500,000	1,000,000	1,500,000	Costs via Thunder Bay
Low	85.29	80.67	79.13	88.45
Medium	93.29	88.67	87.13	91.95
High	104.89	100.27	98.73	101.35

Articulated Car
(Car Utilized On Churchill and Other Load Restricted Lines)

Ocean Marine Market	Costs via Churchill — Throughput (tonnes per year) 500,000	1,000,000	1,500,000	Costs via Thunder Bay
Low	84.41	79.80	78.26	88.45
Medium	92.41	87.80	86.26	91.95
High	104.01	99.40	97.86	101.35

Rehabilitate Rail Line
(Use Conventional Hopper Cars)

Ocean Marine Market	Costs via Churchill — Throughput (tonnes per year) 500,000	1,000,000	1,500,000	Costs via Thunder Bay
Low	89.25	80.61	77.72	88.45
Medium	97.25	88.61	85.72	91.95
High	108.85	100.21	97.32	101.35

NOTE: **Shaded areas indicate scenario where Churchill has a cost advantage.**

Figure 9
Matrix Illustrating Comparison in Total Transportation Costs ($/tonne)
Churchill Versus Thunder Bay (Montreal)

summarized below, assuming an annual shipment program of one million tonnes per year.

- Rail line rehabilitation alternative requires approximately $35 million.
- Box car rehabilitation using friction bearings requires $66 million (i.e. 1,000,000 million tonnes per year / 55 tonne payload per car / 4.5 trips per year per car x $16,300 per car = $66 million).
- Box car rehabilitation using roller bearings requires $106 million (i.e. 1,000,000 million tonnes per year / 55 tonne payload per car / 4.5 trips per year per car x $26,300 per car = $106 million).
- Purchase articulated cars requires $201 million (i.e. 1,000,000 million tonnes per year / 94 tonne payload per car / 4.5 trips per car per year x $85,000 per car = $201 million).

Several observations are noted in regards to these capital cost calculations. Capital costs for the rail line rehabilitation alternative includes only the costs to rehabilitate the rail line since conventional hoppers could be utilized once the line was upgraded and since conventional hopper cars are available at the present time (i.e. no new rail cars would be required). For the three rail car alternatives it should be noted that not all of the capital cost would be allocated to the Churchill movement, depending on the car utilization during the times when the cars are not required for grain movements to Churchill. However, irregardless of how the capital cost is allocated the entire lump sum must still be financed.

In terms of the long term flexibility it is noted that the rail line rehabilitation alternative provides greater long-term flexibility and eliminates the need to maintain a separate fleet of cars exclusively for Churchill.

2.1.9 Impact on Saskatchewan

The impact of any economic benefit to the Province of Saskatchewan which may be derived from utilizing the Port of Churchill for shipping grain to the North Atlantic is diluted by two factors. These include the fact that transportation savings associated with grain movements via Churchill are typically shared equally between the buyer and the seller (Canada Grains Council, 1981), and the fact that the Canadian Wheat Board's current price pooling policy insulates individual producers from both extra-ordinary losses and gains. To illustrate, assuming that Churchill had a sustainable $6 per tonne net transportation advantage over Thunder Bay and that Churchill was exporting 1.4 million tonnes per year, the benefit to Saskatchewan producers would be approximately $2.4 million per year

(i.e. 1,400,000 tonnes per year x $6 per tonne savings x 0.5[5] x 0.56[6] = $2.4 million per year). This $2.4 million per year would translate into approximately $0.13 per tonne for Saskatchewan producers (assuming an annual average Saskatchewan crop of 18 million tonnes).

2.2 Logistics

Based on the analysis presented above it appears that shipping grain via the Port of Churchill makes economic sense. However, the logistics of shipping grain via Churchill also need to be considered.

The logistics of using the Port of Churchill are complex. Before a shipment of grain can be transported via Churchill there must be:

- demand for Canadian grain in the North Atlantic,
- an adequate supply of grain within Churchill's contributing shed area, and
- adequate transportation capacity to move the grain from prairie elevators to Churchill and from Churchill to market.

All three of these components must be integrated considering lag times and shipping season constraints.

2.2.1 Demand

The demand for grain transported via the Port of Churchill is constrained by the following factors.

- A finite demand for Canadian wheat and barley in the North Atlantic.
- Limited storage capacity at the Churchill terminal. Only three grades/types of grain can be efficiently marketed through the Port in any one year.
- A relatively short (i.e. 12 week) shipping season.
- Buyer preference for other ports.

The expected maximum demand for Canadian wheat and barley in the North

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[5] Assuming savings are shared equally between buyer and seller.

[6] Assuming that Saskatchewan produces 56% of Canada's wheat and barley.

Atlantic during the Churchill shipping season was determined as a function of the constraints listed above. The results are presented in Figure 10.

As illustrated in Figure 10, it was determined that the maximum expected demand for Canadian wheat and barley shipped via Churchill would be between 850,000 and 1,700,000 tonnes per year (no estimate for buyer preference was available therefore a range is quoted rather than a specific estimate). This analysis is based on information published by the Canada Grains Council (1990) for the 1989/90 crop year.

2.2.2 Supply

The supply of grain within Churchill's rail rate advantage area[7] is restricted by the following factors.

- Finite production of wheat and barley within Churchill's rail rate advantage area.
- Limited storage capacity at the Churchill terminal. Only three grades/types of grain can be efficiently marketed through the Port in any one year.
- A relatively short (i.e. 12 week) shipping season.
- Only CN shipping blocks serve Churchill[8].

The expected maximum supply of wheat and barley during the Churchill shipping season within Churchill's rail rate advantage area was determined by estimating the total production of wheat and barley within Churchill's rail rate advantage area and then by systematically reducing this figure to reflect the constraints listed above. The results are presented in Figure 11.

As illustrated in Figure 11, it was determined that the maximum expected supply of grain, given the constraints list above, was approximately 850,000 tonnes per year. This analysis is based on a 5 year average of grain production data from 1983 to 1988. The data was obtained from GrainBase (Canada Grains Council, 1988).

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[7] It was assumed that Churchill would only source grain from within its rail rate advantage area. Churchill's rail rate advantage area has been define by the IBI group (1986) as including the crop districts 5A, 5B, 6A, 6B, 7A, 7B, 8A, 8B, 9A, and 9B in Saskatchewan and crop districts 4, 5 and 6 in Manitoba.

[8] A 50/50 split between CN and CP shipping blocks is assumed.

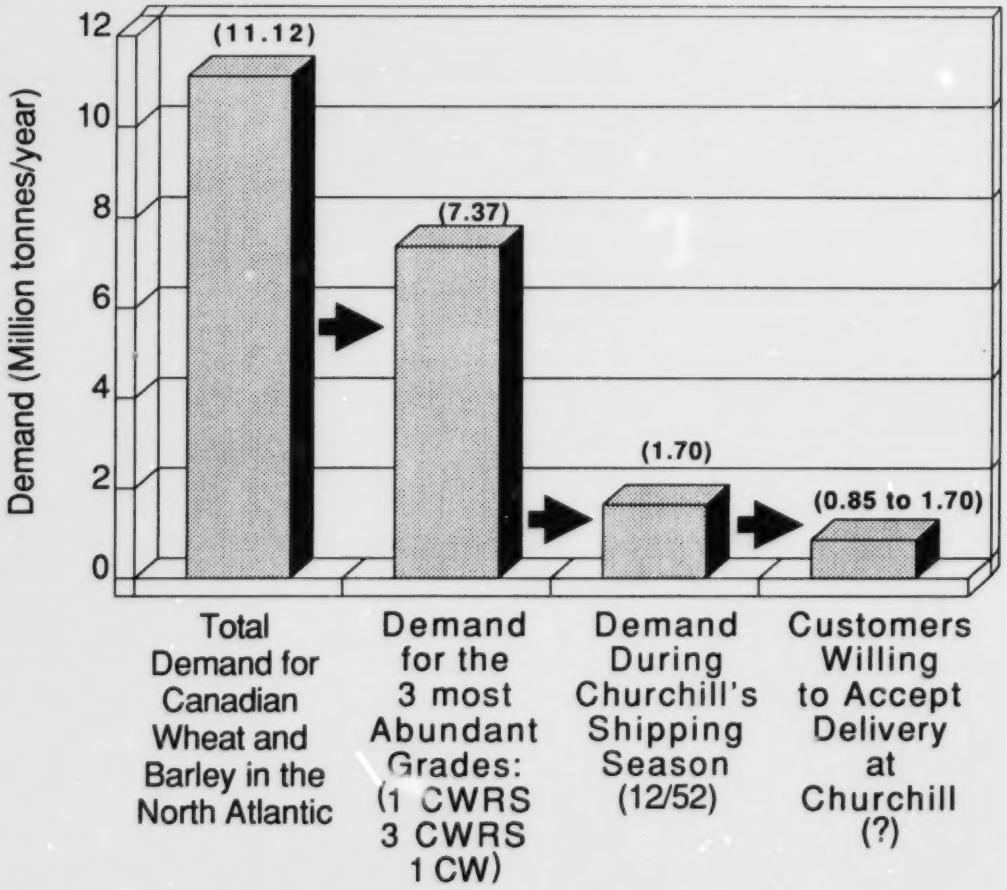

Figure 10

Factors Constraining Demand for Grain from Churchill

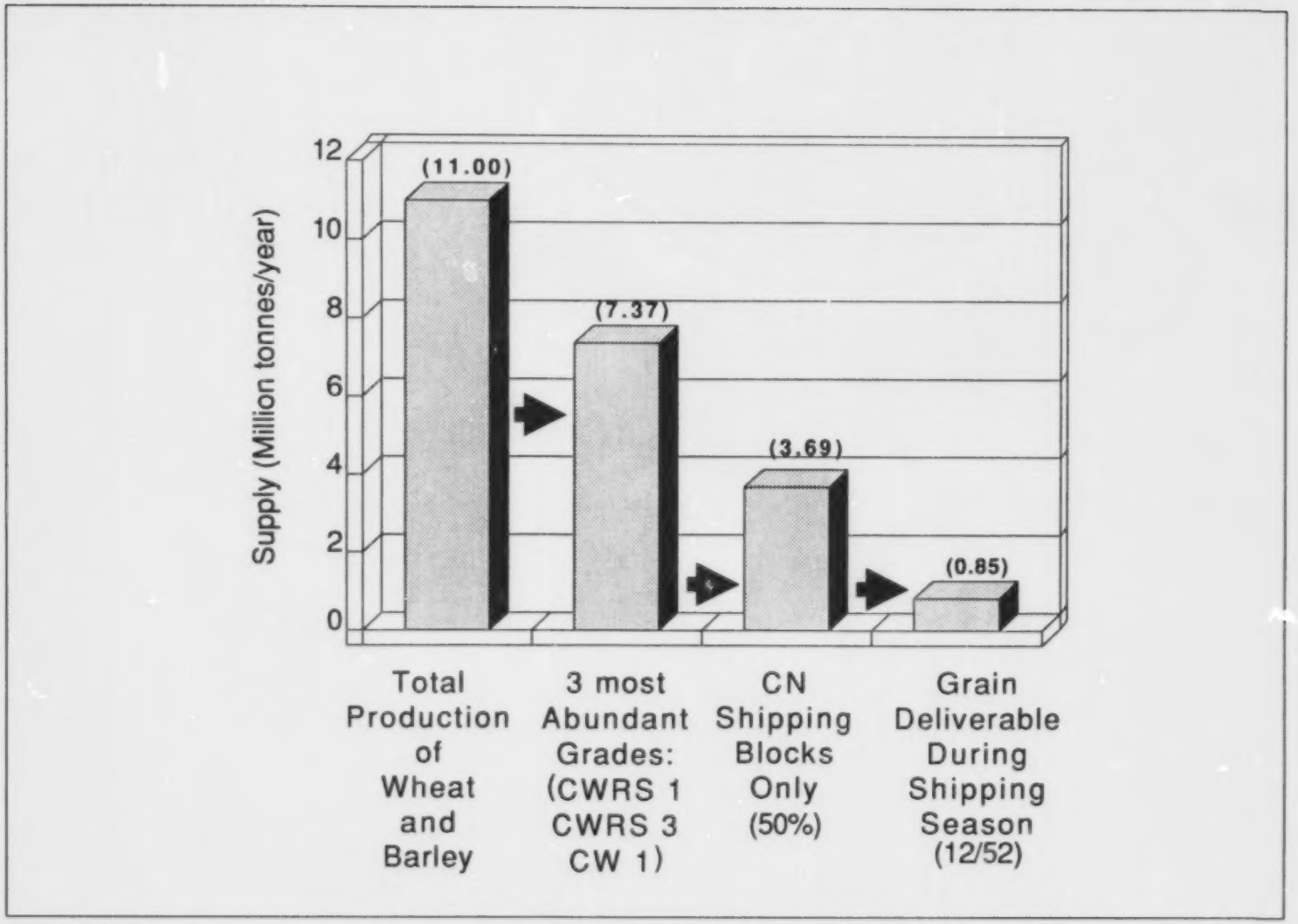

Figure 11
Factors Constraining Supply of Grain at Churchill

2.2.3 Transportation

Many studies have been conducted in the past with the purpose of determining the maximum capacity of the Port of Churchill. The results of four of these studies are presented in Table 1. From the data presented in Table 1 it is concluded that, given the current configuration of the railway and Port[9], the current capacity of Churchill is approximately 900,000 tonnes per year.

Table 1
Summary of Published Literature on the Capacity of the Port of Churchill

Organization	Base Year of Study or Year Study was Conducted	Estimated Annual Capacity (tonnes)
Canadian Grain Commission	1976	924,000
Hall Commission	1977	902,000
Snavely, King and Associates	1982	895,000
IBI Group	1986	900,000

2.2.4 Conclusions

From a comparison of the logistics of demand, supply and transportation capacity for the Port of Churchill it is concluded that the current constraint on the annual throughput through the Port of Churchill is the supply of grain. Supply currently restricts the throughput of the Port to approximately 850,000 tonnes per year. This conclusion corresponds with the historical tonnages transported through the Port. As illustrated in Figure 12, the maximum Port throughput was 755,200

[9] Assuming the terminal is operated for one shift per day and an adequate supply of rail cars exist.

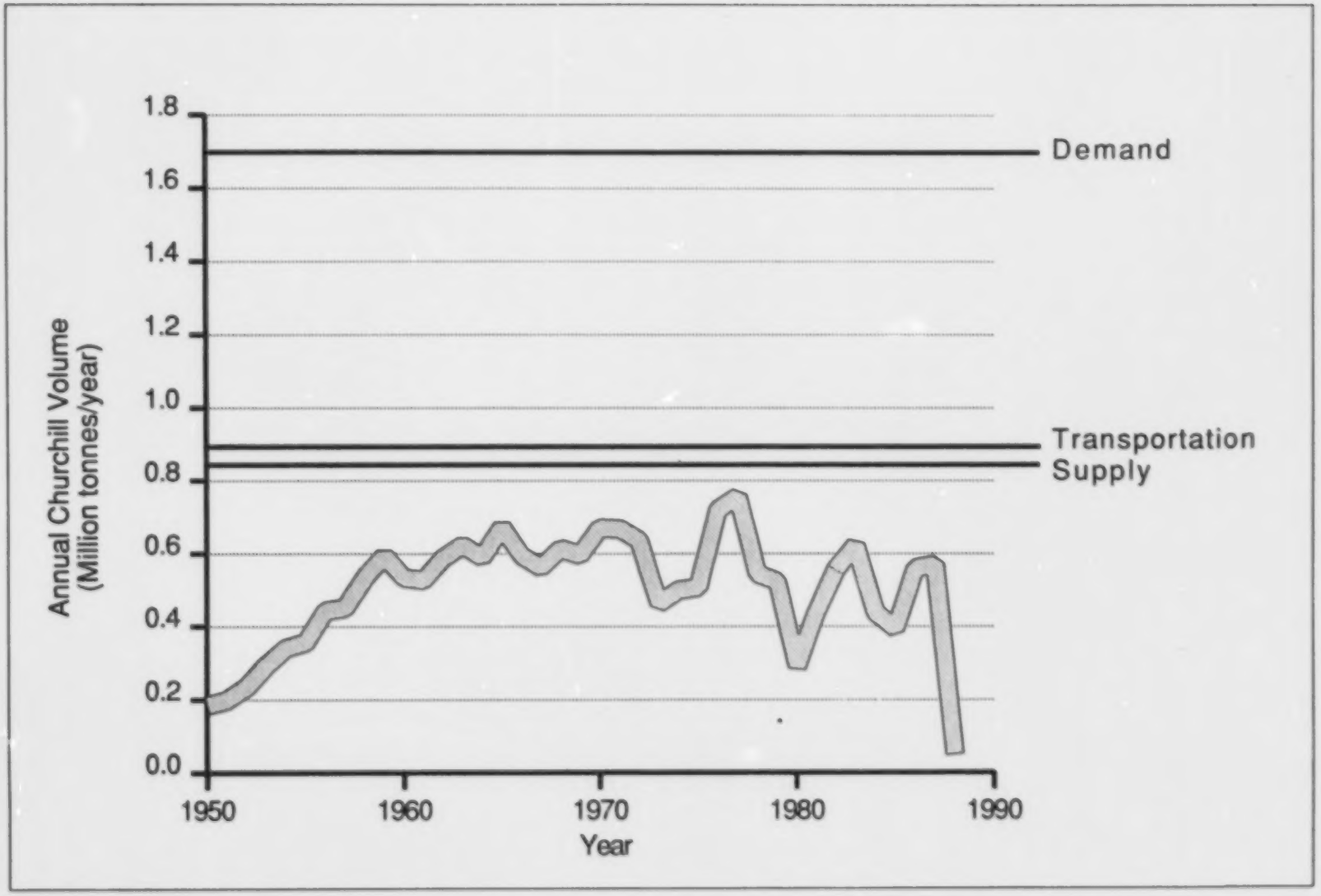

Figure 12
Historical Annual Volumes Shipped Through the Port of Churchill

tonnes in 1977. This is just less than the supply constraint of 850,000 tonnes per year.

There are several changes to the Port and railway that could be implemented to improve the logistics of shipping grain through Churchill. These improvements are listed below. (This analysis assumes that the rail line is rehabilitated.) This analysis is illustrated in Figure 13.

- The shipping season at Churchill could be extended. The IBI Group (1986) recommended that Churchill's shipping season be extended from 12 weeks (July 26 to October 18) as presently exists to 17 weeks (July 20 to November 15). Extending the shipping season would result in a 40% (i.e. 17/12) increase in supply, demand and transportation capacity through Churchill. Given this change was made, supply would still be the constraint, but the maximum throughput of the Port would increase to approximately 1.2 million tonnes per year.

- A CN/CP car interchange agreement could be negotiated. This would theoretically double the amount of grain available within Churchill's rail rate advantage area. Doubling the supply of grain would make transportation capacity, in particular the throughput capacity of the terminal elevator, the limiting constraint at an estimated throughput of approximately 1.25 million tonnes per year (i.e. current transportation capacity of 900,000 tonnes per year with a 40% increase as noted above).

- The terminal could implement a 24 hour/day operating schedule. It is estimated that the capacity of the Port (i.e. the terminal plus berths, etc.) could approach 2 million tonnes per year[10] if the terminal was operated 24 hour per day.

For the throughput of the Port to exceed the 2 million tonnes per year either the shipping season would have to be extended beyond 17 weeks or a large investment in the terminal and the railway infrastructure would be required. The IBI Group (1986) concluded that extending the shipping season beyond 17 weeks was not economically feasible and the degree of capital required to substantially increase the Port's throughput is prohibitively large. Therefore, the feasible upper limit of the throughput capacity of the Port is estimated to be approximately 2 million tonnes per year.

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[10] This estimate was obtained from the Operations Manager at the Port of Churchill. Some minor equipment upgrades may be required to obtain this throughput.

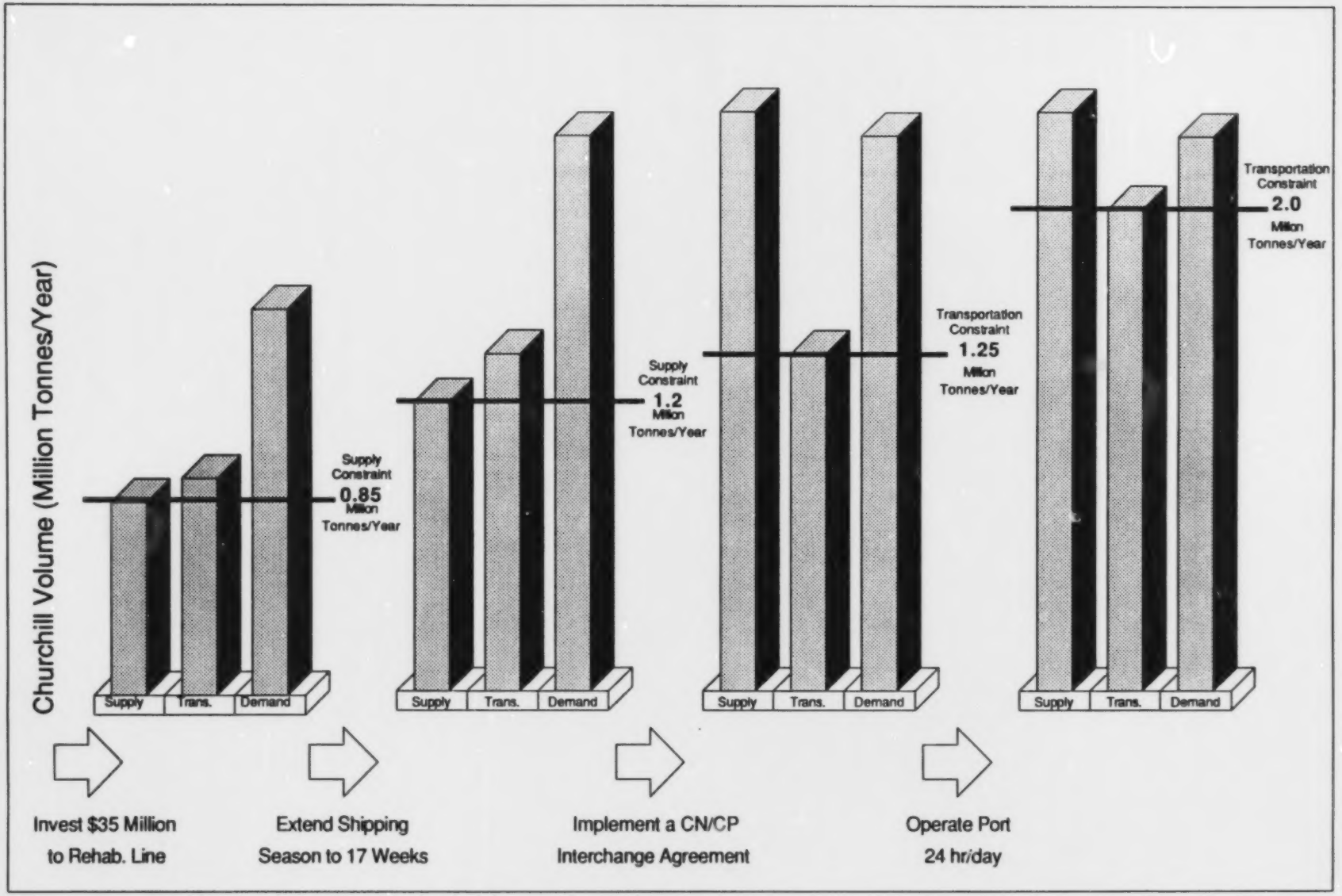

Figure 13

Changes That Could Increase Port of Churchill's Throughput Volumes

Chapter Three: Impact of Recent and Proposed Changes on the Port of Churchill

3.1 Price Pooling

The past 10 to 15 years has seen a dramatic shift in Canadian grain markets away from the traditional markets in Europe and towards the Pacific Rim. This market shift, plus technological changes in ocean marine freight technology and increasing laker costs on the Great Lakes, has lead to the demise, if not the reversal, of the price premium that East Coast Ports have enjoyed in the past relative to West Coast Ports. When the concept of price pooling was first established, the Port of Thunder Bay and the Port of Vancouver were considered to be equivalent export positions. This however is no longer the case.

At least two possible price pooling policy alternatives are currently being considered to replace the existing price pooling methodology. These include the CWB proposal and the National Grains Bureau (NGB) proposal. The implication of both of these proposals on payments paid by Saskatchewan producers and the effect of including Churchill as a pooling point is summarized in Figure 14. Additional details are provided in Appendix B.

3.1.1 Current Price Pooling Policy

The current price pooling policy recognizes the Port of Vancouver and the Port of Thunder as equivalent pooling points. Under this policy the producer is charged transportation costs equal to the lesser of the freight charges to either Vancouver or Thunder Bay on a free-along-side (FAS) basis. Under this policy Alberta producers effectively subsidize the shipment of Saskatchewan and Manitoba export grain. It is this cross-subsidization that the CWB and NGB proposals are attempting to remedy.

3.1.2 The CWB Proposal

The Canadian Wheat Board has put forward a proposal which if adopted would see the eastern pooling point changed from Thunder Bay to Montreal. Under this proposal the producer would pay the lesser of the freight charges to either Vancouver or Montreal on a FAS basis. Given the current freight rates all prairie producers would be charged the Vancouver rate since Vancouver is the least cost transportation route (compared to Montreal) from all points on the prairies.

A drawback to the CWB proposal is that the proposal does not recognize the physical capacity of the West Coast. It has been estimated that the West Coast

	Million Dollars/Year				
	Cost Paid Directly	Pooled Costs	Total Costs Paid	Change From Current Policy	Change Including Churchill
Current policy	206.82	345.55	552.37	NA	
CWB proposal	232.40	320.04	552.44	0.07	-0.70
CWB proposal (with Churchill)	229.90	321.84	551.74	-0.63	
NGB proposal	331.29	226.00	557.29	4.92	-0.50
NGB proposal (with Churchill)	329.92	226.87	556.79	4.42	

* 1987 data
* 1987 freight regime
* crop district basis

Figure 14
The Impact on Saskatchewan of Changing the Canadian Wheat Board's Price Pooling Policy

currently has the capacity to export approximately 19 million tonnes per year. This means that under normal crop conditions only grain west of Regina could physically move through the West Coast. Therefore the transportation costs charged to the producer should decrease as you move east from the constraint line (i.e. Regina) reflecting what is actually occurring in the market place. This discrepancy is addressed in the NGB proposal.

3.1.3 The NGB Proposal

Brian Paddock[11] (1990), formerly of the National Grains Bureau, has put forth a price pooling proposal which if adopted would retain Thunder Bay as the eastern pooling point. Mr. Paddock's proposal attempts to address the existence of a port differential as well as the physical capacity of the West Coast (i.e. the constrained nature of the transportation system) by defining a constraint line. Producers west of the constraint line[12] would incur freight charges based on a west coast movement. Producers east of the constraint line would incur freight charges which are backed-off from freight costs charged at the constraint line (i.e. freight charges decrease as you move east of the constraint line). Grain is delivered on a free-on-board basis.

3.1.4 Impact of Price Pooling Changes on Churchill

Implementing either the CWB Proposal or the NGB proposal would not affect the utilization of the Port of Churchill. The Canadian Wheat Board conducts pooling to equalize the farmgate value of grain throughout the prairies. Pooling does not affect, or reflect, the actual cost of moving grain. As such it does not influence the decision to route grain through any particular port, and therefore, can not influence the utilization of the Port of Churchill.

Although changing the pooling policy will not affect the utilization of Churchill it will impact the net return to producers. Because of the re-allocation of the transportation costs charged to producers, Manitoba and Saskatchewan will experience a decline in net returns while Alberta will experience an increase in net returns.

To mitigate against the negative impact that Saskatchewan producers are likely to experience under either price pooling proposal, Saskatchewan could advocate the

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[11] It should be noted that the proposal referred to as the "NGB Proposal" is Mr. Paddock's work, and has not been formally endorsed by the National Grains Bureau.

[12] The constraint line is defined as a North-South line which defines the eastern boundary of West Coast shed area.

adoption of Churchill as a pooling point. If the CWB proposal were adopted Saskatchewan producers would incur a cost increase of approximately $66,000 over existing costs[13]. However, if the CWB proposal is adopted and Churchill was made a pooling point Saskatchewan would incur a cost decrease of approximately $630,000 per year under existing costs. If the NGB proposal were adopted it is estimated that Saskatchewan would incur an extra cost of approximately $4.9 million per year over existing costs while including Churchill would result in a cost increase of approximately $4.4 million per year over existing costs. These costs are summarized in Figure 14.

3.2 Inland Grain Terminals

As part of the rationalization of the grain transportation and handling system several new, large capacity inland grain terminals are proposed to be built in Wadena and Moosomin. The potential impact that these proposed inland grain terminals may have on the utilization of the Port of Churchill is discussed below.

The proposed inland grain terminals at Wadena and Moosomin will have a positive impact on the logistics of using the Port of Churchill. This conclusion is based on the fact that:

- these inland terminals will help to alleviate Churchill's current problems associated with sourcing large amounts of a single grade of grain since the terminals have increased storage capacities and since they draw grain from both Canadian National and Canadian Pacific shipping blocks,

- the proposed inland terminals will be capable of cleaning grain, therefore reducing the amount of grain that the Churchill terminal has to clean and possibly reducing the working area required for cleaning grain at the Port (it is estimated that approximately 375,000 tonnes of Port's storage capacity is used as working space for the grain cleaning process), and

- inland terminals will make more efficient use of the Churchill's rail car fleet.

While the potential impact of these inland grain terminals on the logistics of Churchill is expected to be positive, it is estimated that the amount of grain that they contribute to the Churchill shipping program is not likely to be large enough to create an impetus for increased utilization of the Port of Churchill. The

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[13] Assuming that the analysis is conducted on a crop district basis using the 1987 freight regime and 1987 crop production and shipping data. Data taken from GrainBase, Canada Grains Council, 1988.

potential contribution of two terminals is limited by the total throughput of the terminals, the length of the Churchill shipping season and the percentage of the grain throughput that is allocated to Churchill. These restrictions are integrated to form the decision tree illustrated in Figure 15. Assuming that the storage capacity of both terminals is devoted to the three grades of grain shipped through Churchill it is estimated that the two terminals could contribute from 35,000 to 214,000 tonnes per year to Churchill's shipping program, with an average expected value of 90,000 tonnes per year. The 90,000 tonnes per year translates into approximately 6.5% of Churchill's expected annual volume, assuming at [illegible].4 million tonne per year shipping program.

The construction of the inland grain terminals at Moosomin and Wadena will not change Churchill's economic competitive position relative to Montreal. The inland terminals are a common element to both ports. Therefore, any economic benefit that may be derived from the new inland grain terminals could potentially benefit either port and the net economic competitive position of the two ports will remain unchanged.

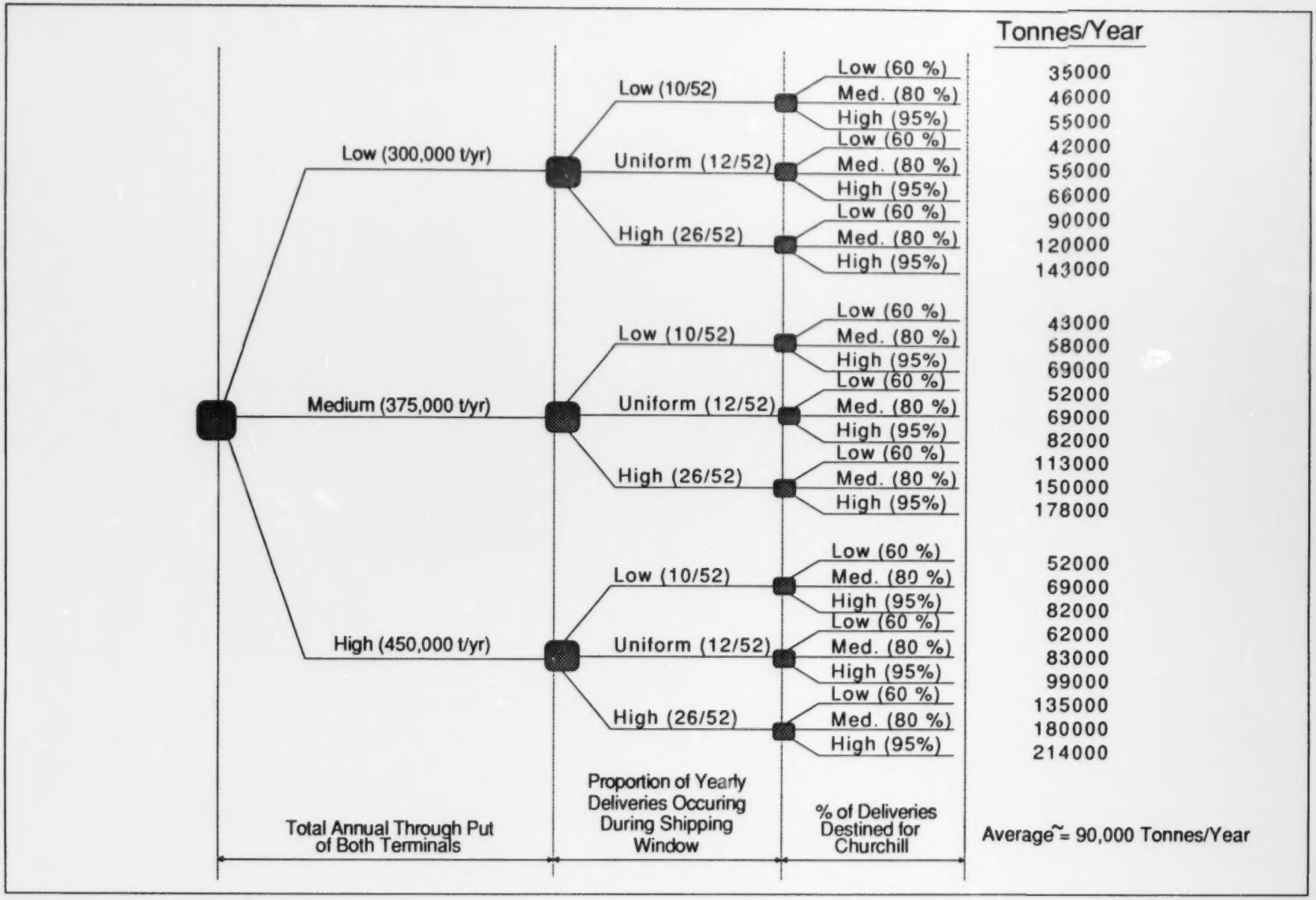
3.3 Churchill Short Line Railway

The last decade has seen a major change in the United States rail road industry. More than one hundred short line and regional rail roads have been formed on lines that have been or are about to be abandoned, or on lines that have been spun-off from major Class 1 carriers. Canada has seen the formation of two short line companies.

The analysis conducted for this project was essentially an order of magnitude costing exercise into restructuring of the Churchill rail line as a short line railway. The analysis was based on a regression model developed by Wilson, Heads and Tolliver of the University of Manitoba Transport Institute with the operation of the Churchill rail line from Thompson to Churchill being costed. Details of the costing exercise are provided in Appendix C.

The results obtained from the costing model were adjusted to reflect the unique environment in which the short line railway was presumed to operate (i.e. required line rehabilitation and higher line maintenance costs). All costs were developed over a range of tonnages (i.e. 0.25 to 2.50 million tonnes per year). A summary of the model output is provided in Figure 16.

At the one million tonnes per year level the regression model indicated that the short line would incur total costs in the order of $7.3 per tonne. Adjusting this figure to reflect the cost of rehabilitating the rail line (approximately $4.0 per tonne) and extraneous line maintenance costs (approximately $1.2 per tonne) the



Figue 15

Potential Contribution of Inland Grain Terminals to the Churchill Shipping Program

adjusted total cost was estimated to be approximately $12.5 per tonne[14].

To assess the financial viability of the short line railway total adjusted cost estimates were compared against two revenue estimates. The revenue derived by the short line railway will depend on the outcome of negotiations between the Class 1 carrier, the short line, and the WGTA. The lower bound estimate was calculated to be $10.85 per tonne. This estimate was based on the short line's share of the full WGTA freight rate for a movement from Saskatoon to Churchill, based proportionally on distance. This assumes that the Class 1 carrier captures the majority of switching costs. The upper bound estimate was calculated to be $18.40 per tonne. This estimate was calculated using the full WGTA rate schedule and assuming that the Class 1 carrier movement and the short line movement were independent. This assumes that both rail lines receive full compensation for their switching costs.

The upper and low revenue estimates were compared to the adjusted estimate of total cost for the short line railway (see Figure 16). From this comparison it appears that the short line may be marginally viable. However, the viability of the short line, like the viability of the current Class 1 operation, is highly dependent on volume. From Figure 16 it appears that the short line requires volumes approaching 1 million tonnes per year before it has a reasonable chance of success.

A potential conflict exists in that as Churchill's throughput volume increases the willingness of the Class 1 carrier to give up the line is likely to decrease. In this regard the viability of the Churchill rail line is not an issue of who owns and operates the line, but what volumes can be maintained[15]. This conclusion is consistent with the analysis presented in Chapter 2 of this report.

3.4 Additional Commodities

The analysis carried out for this project has shown that the future of the Port of Churchill is dependent on the amount of traffic that can be routed through the Port. Although the continued operation of the Port can be justified on the basis of export grain alone, a specific objective of this project was to identify any Saskatchewan commodities, other than grain, that could be economically shipped through the Port of Churchill. Additional commodities would serve to lower the

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[14] This figure does not include opportunity cost on investment capital or working capital.

[15] It has been postulated that the Class 1 carrier may be in a more competitive position to operate the line due to the seasonal operation and the Class 1 carrier would have more operating flexibility than would the short line.

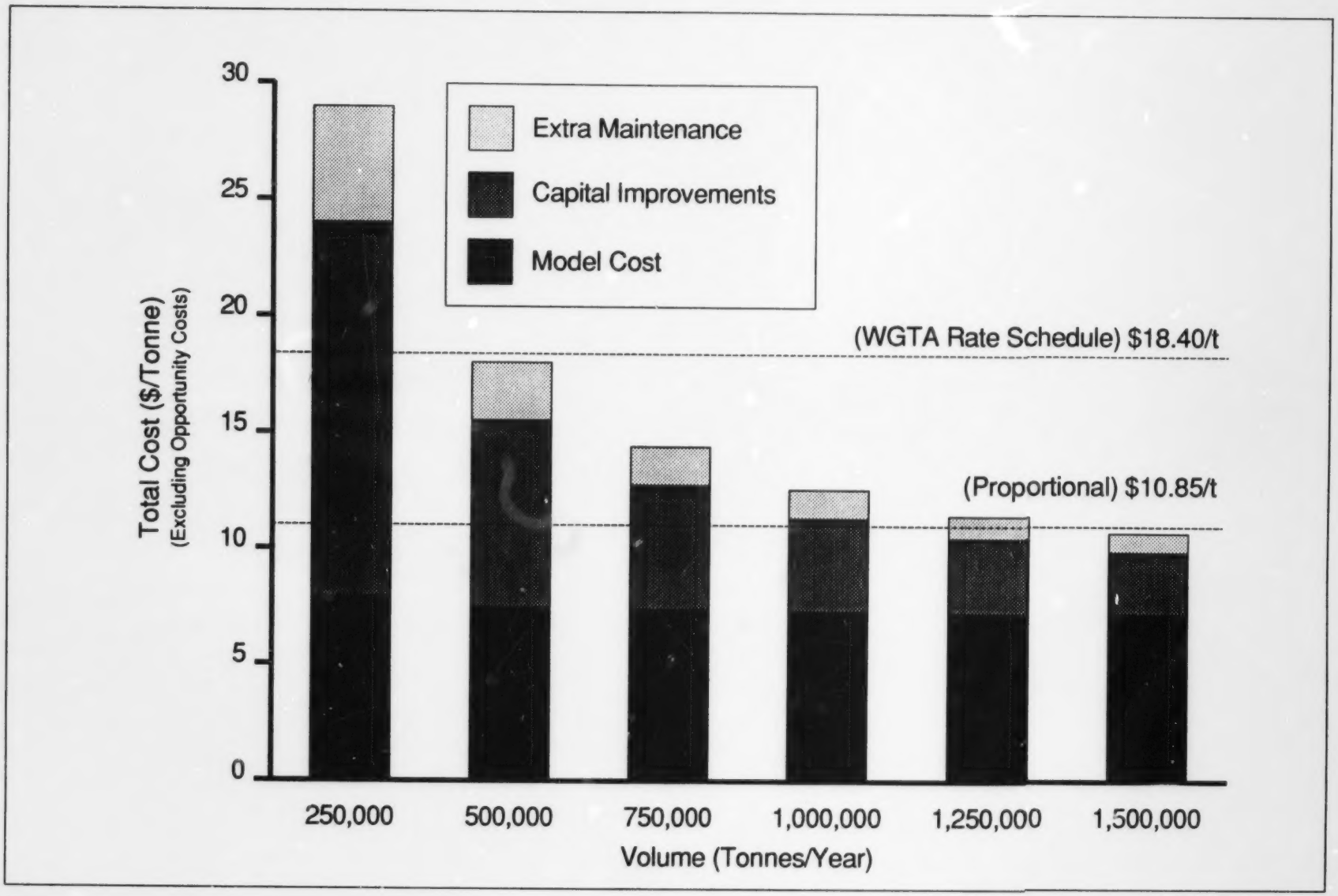

Figure 16
Economics of the Churchill Short Line

unit cost of shipping grain by spreading the fixed costs of the rail line and the Port over greater volumes, and would also diversify and secure the continued operation of the Port.

A review of the work done by the IBI Group (1986) did not identify any additional Saskatchewan commodities that could economically move through the Port of Churchill. Although Saskatchewan does produce some commodities which are traded in the markets where Churchill has a distance advantage, all but potash were disqualified because they were either produced in small volumes (i.e. less than 25,000 tonnes per year), did not move by rail in significant volumes (i.e. less than 25,000 tonnes per year), were shipped in small lots or shipped outside of Churchill's shipping season, were produced outside of Churchill's rail rate advantage area, were subject to institutional constraints, or were subject to logistical constraints.

Potash passed the requirements listed above, but was disqualified as a potential candidate as a Churchill commodity because of unfavourable economics. Shipping potash through Churchill is not economically viable because the rail rate advantage associated with the Churchill movement is more than offset by the higher terminal and inventory costs. It is unlikely that moving potash through Churchill will become economically justifiable until the shipping season at the port can be substantially extended. Extending the season would serve to increase the Ports capacity allowing the terminal costs to be amortized over a greater volume and reduce the storage time thereby reducing inventory costs.

Additional details on the economics of shipping potash through the Port of Churchill are provided in Appendix D.

3.5 Tourism

A specific objective of this project was to identify any benefits which may be derived from tourism opportunities at the Port of Churchill by the Province of Saskatchewan. A review of the relevant literature did not reveal any significant tourism opportunities at Churchill. It was further concluded that even if tourism opportunities did exist, or were developed in the future, the benefit derived by Saskatchewan from these opportunities would be minimal.

Chapter Four: Conclusions

The cost competitiveness of the Port of Churchill relative to the Port of Montreal increases as Churchill's throughput volumes increase. At volumes approaching one million tonnes per year, Churchill is a cost competitive export route for Saskatchewan grain. However, the Port of Churchill will only achieve a throughput volume level of one million tonnes per year if an investment is made to secure an adequate supply of rolling stock or to rehabilitate the rail line and the logistical factors restricting the Port's maximum throughput volume are addressed and remedied.

Rehabilitating the Churchill rail line appears be the best investment to secure the required rail capacity. This investment offers the greatest long term flexibility, requires the least "up-front" capital and at volumes greater than 1.3 million tonnes per year is the least cost method of securing an adequate supply of rolling stock.

At the present time there are logistical constraints restricting the maximum throughput of the Port of Churchill. These logistical constraints can be alleviated by extending the shipping season to 17 weeks, negotiating an interchange agreement between Canadian National and Canadian Pacific and/or operating the terminal at Churchill 24 hours per day.

While Churchill can be a cost competitive export route for Saskatchewan grain, utilization of the Port of Churchill will not have a significant impact on the net returns of Saskatchewan farmers. This is due to the small throughput volume of the Port, the fact that any cost advantage would be shared between the grain buyer and the grain seller, and the Canadian Wheat Boards current price pooling policy. For example, if Churchill achieves a throughput volume of 1.4 million tonnes per year and has a $6 per tonne realized cost advantage, the benefit realized by Saskatchewan producers would be $2.4 million per year. This translates into approximately $0.13 per tonne for grain produced in Saskatchewan.

With respect to the other objectives of this project, the following has been concluded.

- Changing the Canadian Wheat Board's price pooling policy to either the CWB proposal or the NGB proposal will not affect the utilization of the Port of Churchill. Adopting either proposal would, however, reduce the net returns to Saskatchewan producers. Amending the proposals to include Churchill as a pooling point would help to mitigate against the negative impact that Saskatchewan producers would experience if the NGB proposal were adopted and would actually increase the net return to Saskatchewan producers under the CWB proposal.

- Construction of the inland grain terminals at Moosomin and Wadena is not expected to have a major impact on the utilization of the Port of Churchill. It is expected, however, that these two terminals will contribute approximately six to seven percent of Churchill's annual throughput volume and as such they will have only a small positive impact on the logistics of exporting grain through the Port.

- Restructuring the Churchill rail line from Thompson to Churchill as a short line railway is only viable at volumes approaching one million tonnes per year. It is not expected that restructuring this portion of the rail line would reduce the cost of transporting grain to Churchill, or benefit Saskatchewan producers.

- No Saskatchewan commodities other than board grains were identified as being economical to ship through the Port of Churchill.

- The potential benefit to Saskatchewan of exploiting tourism opportunities at the Port of Churchill was determined to be minimal.

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Appendix A

Calculation of Grain Transportation Costs

Appendix A Calculation of Grain Transportation Costs

This appendix presents details on the calculation of grain transportation costs as outlined in Chapter 2 of this report.

The analysis framework is similar to that presented in Appendix E of Study D Port of Churchill Grain Shipping Costs, conducted by IBI Group, March 1986. Additional details are available in the report noted. The analysis was modified based on the objectives of this report. The modifications and sources are noted in the tables.

Various investment alternatives were considered since CN does not permit the operation of conventional hopper cars on the Churchill rail line due to soil and permafrost conditions. Four alternative investment options were evaluated. These include:

(1) rehabilitating the existing box cars with friction bearings,

(2) rehabilitating the existing box cars with roller bearings,

(3) purchasing special articulated hopper cars, and

(4) rehabilitating the Churchill rail line to allow the use of conventional grain hopper cars.

Three levels of rail car utilization were evaluated. These include:

(1) operate on the Churchill rail line only (it is assumed that the Churchill season is 12 weeks long, at 20 days per round trip the cars would make 4.5 trips per year),

(2) operate on the Churchill rail line during the Churchill shipping season and on other load restricted lines during the remainder of the year (the cost premium or savings associated with the specialized rail cars is therefore spread over the entire year), and

(3) operate on the Churchill rail line during the Churchill shipping season and on all other rail lines during the remainder of the year (the cost premium or savings associated with the specialized rail cars relative to conventional hopper cars is therefore attributable to the Churchill movements only).

The analysis also considered three tonnage (volume) levels: 500,000 tonnes per year; 1,000,000 tonnes per year; and 1,500,000 tonnes per year.

Table A1 presents to rail line rehabilitation cost requirements associated with the investment alternatives discussed above. These costs are presented as a function

of the car utilization rates and the annual tonnages as discussed above.

Table A2 presents the rail car related capital cost estimates. All costs, car capacities, expected lives, etc. were obtained from the IBI Group study. The final column presents the capital cost relative to the cost of operating a conventional grain hopper car.

Table A3 presents an estimate of the total annual cost associated with shipping grain on the Churchill rail line as a function of the various investment alternatives, car utilization rates and tonnage levels (1990 dollars). It is noted that in calculating the rail operating costs the WGTA rail rate was utilized. Since this rate is based on operating with conventional grain hopper cars the difference between operating conventional hopper cars and specialized equipment is added to the rail rate to obtain the total operating cost.

Other assumptions utilized in Table A1 to A3 are:

- Churchill open for 12 weeks per year,
- 20 day turn-around time for rail cars for both Churchill and Thunder Bay,
- interest rate of 11%

Table A4 presents the a total transportation cost comparison between shipments headed through the Port of Churchill and the Port of Montreal. All costs incurred in getting grain from the farm to market (export port) are considered. The final column of Table A4 compares the total costs per tonne via the Port of Churchill versus via the Port of Montreal (Thunder Bay). Data sources are as noted in the Table.

Table A1 Rail Line Capital Cost Estimates for Shipping Grain on the Churchill Rail Line

Operating Decisions			Rail Line Rehabilitation Costs		
			Capital Costs	Life	Annual Capital Costs
Investment Alternative	Car Utilization	Churchill Volume (t/yr)	($)	(yrs)	($/yr)
	Church. Only	500,000	0		0
Rehab.	Church. Only	1,000,000	0		0
Box	Church. Only	1,500,000	0		0
Cars	Church.+Load	500,000	0		0
Using	Church.+Load	1,000,000	0		0
New	Church.+Load	1,500,000	0		0
Friction	All lines	500,000	0		0
Bearings	All lines	1,000,000	0		0
	All lines	1,500,000	0		0
	Church. Only	500,000	0		0
Rehab.	Church. Only	1,000,000	0		0
Box	Church. Only	1,500,000	0		0
Cars	Church.+Load	500,000	0		0
Using	Church.+Load	1,000,000	0		0
New	Church.+Load	1,500,000	0		0
Roller	All lines	500,000	0		0
Bearings	All lines	1,000,000	0		0
	All lines	1,500,000	0		0
	Church. Only	500,000	0		0
	Church. Only	1,000,000	0		0
Purchase	Church. Only	1,500,000	0		0
Articulated	Church.+Load	500,000	0		0
Hopper	Church.+Load	1,000,000	0		0
Cars	Church.+Load	1,500,000	0		0
	All lines	500,000	0		0
	All lines	1,000,000	0		0
	All lines	1,500,000	0		0
Rehab.		500,000	35000000	30	4,025,861
Rail		1,000,000	35000000	30	4,025,861
Line		1,500,000	35000000	30	4,025,861

Interest Rate =	0.11

Table A2 Rail Car Capital Cost Estimates for Shipping Grain on the Churchill Rail Line

Operating Decisions			Car Related Capital Costs							
Investment Alternative	Car Utilization	Churchill Volume (t/yr)	Capital costs ($)	Car Capacity (t/car)	Capital Cost/Tonne of Car Capacity ($)	Life (Given Level of Utilization) (yrs)	Annual Capital Cost/Tonne of Car Capacity ($/yr/t)	Number of Turns per Year (turns/yr)	Capital Cost Allocated to Churchill Per tonne Moved ($/t)	Capital Cost/Tonne Moved Compared to Conv. Hopper (1) ($/t)
	Church. Only	500,000	16300	55	296.36	20	37.22	4.5	8.27	3.13
Rehab.	Church. Only	1,000,000	16300	55	296.36	20	37.22	4.5	8.27	3.13
Box	Church. Only	1,500,000	16300	55	296.36	20	37.22	4.5	8.27	3.13
Cars	Church.+Load	500,000	16300	55	296.36	5	80.19	18	4.45	−0.69
Using	Church.+Load	1,000,000	16300	55	296.36	5	80.19	18	4.45	−0.69
New	Church.+Load	1,500,000	16300	55	296.36	5	80.19	18	4.45	−0.69
Friction	All lines	500,000	16300	55	296.36	5	80.19	4.5	2.39	−2.75
Bearings	All lines	1,000,000	16300	55	296.36	5	80.19	4.5	2.39	−2.75
	All lines	1,500,000	16300	55	296.36	5	80.19	4.5	2.39	−2.75
	Church. Only	500,000	26300	55	478.18	20	60.05	4.5	13.34	8.20
Rehab.	Church. Only	1,000,000	26300	55	478.18	20	60.05	4.5	13.34	8.20
Box	Church. Only	1,500,000	26300	55	478.18	20	60.05	4.5	13.34	8.20
Cars	Church.+Load	500,000	26300	55	478.18	8	92.92	18	5.16	0.02
Using	Church.+Load	1,000,000	26300	55	478.18	8	92.92	18	5.16	0.02
New	Church.+Load	1,500,000	26300	55	478.18	8	92.92	18	5.16	0.02
Roller	All lines	500,000	26300	55	478.18	8	92.92	4.5	5.22	0.08
Bearings	All lines	1,000,000	26300	55	478.18	8	92.92	4.5	5.22	0.08
	All lines	1,500,000	26300	55	478.18	8	92.92	4.5	5.22	0.08
	Church. Only	500,000	85000	94	904.26	30	104.01	4.5	23.11	17.97
	Church. Only	1,000,000	85000	94	904.26	30	104.01	4.5	23.11	17.97
Purchase	Church. Only	1,500,000	85000	94	904.26	30	104.01	4.5	23.11	17.97
Articulated	Church.+Load	500,000	85000	94	904.26	30	104.01	18	5.78	0.64
Hopper	Church.+Load	1,000,000	85000	94	904.26	30	104.01	18	5.78	0.64
Cars	Church.+Load	1,500,000	85000	94	904.26	30	104.01	18	5.78	0.64
	All lines	500,000	85000	94	904.26	30	104.01	4.5	7.69	2.55
	All lines	1,000,000	85000	94	904.26	30	104.01	4.5	7.69	2.55
	All lines	1,500,000	85000	94	904.26	30	104.01	4.5	7.69	2.55
Rehab.		500,000	70000	87	804.60	30	92.55	18	5.14	0.00
Rail		1,000,000	70000	87	804.60	30	92.55	18	5.14	0.00
Line		1,500,000	70000	87	804.60	30	92.55	18	5.14	0.00

Interest Rate =	0.11

NOTE: (1) "Capital Cost/Tonne Moved Compared to Conv. Hopper" is the difference between the capital cost per tonne for the alternative noted and the capital cost if a conventional hopper car were utilized (ie. $5.14 per tonne).

Table A3 Total Annual Cost Estimates for Shipping Grain on the Churchill Rail Line (1)

Operating Decisions			Annual Capital Costs			Operating Costs						Total Annual Rail Costs (1)					
												Total Rail Costs			Per Tonne Rail Costs		
Investment Alternative	Car Utilization	Churchill Volume	Rail Line Rehab.	Rail Cars	Total Annual Capital Cost	WGTA Rail Rate (2)	Rail Car Operating Cost	Operating Costs Above Conven. Hopper	WGTA Special Subsidy	CN Losses	Branch Line Subsidy	Capital Costs	Operating Costs (3)	Total Costs	Capital Costs	Operating Costs	Total Costs
		(t/yr)	($/yr)	($/yr)	($/yr)	($/t)	($/t)	($/t)	($/yr)	($/yr)	($/yr)	($/yr)	($/yr)	($/yr)	($/t)	($/t)	($/t)
	Church. Only	500,000	0	4,135,117	4,135,117	28.49	12.65	4.07	680,000	1,657,000	2,281,000	4,135,117	20,898,000	25,033,117	8.27	41.80	50.07
Rehab.	Church. Only	1,000,000	0	8,270,234	8,270,234	28.49	12.65	4.07	680,000	1,657,000	2,281,000	8,270,234	37,178,000	45,448,234	8.27	37.18	45.45
Box	Church. Only	1,500,000	0	12,405,351	12,405,351	28.49	12.65	4.07	680,000	1,657,000	2,281,000	12,405,351	53,458,000	65,863,351	8.27	35.64	43.91
Cars	Church.+Load	500,000	0	2,227,422	2,227,422	28.49	12.65	4.07	680,000	1,657,000	2,281,000	2,227,422	20,898,000	23,125,422	4.45	41.80	46.25
Using	Church.+Load	1,000,000	0	4,454,844	4,454,844	28.49	12.65	4.07	680,000	1,657,000	2,281,000	4,454,844	37,178,000	41,632,844	4.45	37.18	41.63
New	Church.+Load	1,500,000	0	6,682,267	6,682,267	28.49	12.65	4.07	680,000	1,657,000	2,281,000	6,682,267	53,458,000	60,140,267	4.45	35.64	40.09
Friction	All lines	500,000	0	1,197,312	1,197,312	28.49	12.65	4.07	680,000	1,657,000	2,281,000	1,197,312	20,898,000	22,095,312	2.39	41.80	44.19
Bearings	All lines	1,000,000	0	2,394,623	2,394,623	28.49	12.65	4.07	680,000	1,657,000	2,281,000	2,394,623	37,178,000	39,572,623	2.39	37.18	39.57
	All lines	1,500,000	0	3,591,935	3,591,935	28.49	12.65	4.07	680,000	1,657,000	2,281,000	3,591,935	53,458,000	57,049,935	2.39	35.64	38.03
	Church. Only	500,000	0	6,671,998	6,671,998	28.49	12.65	4.07	680,000	1,657,000	2,281,000	6,671,998	20,898,000	27,569,998	13.34	41.80	55.14
Rehab.	Church. Only	1,000,000	0	13,343,997	13,343,997	28.49	12.65	4.07	680,000	1,657,000	2,281,000	13,343,997	37,178,000	50,521,997	13.34	37.18	50.52
Box	Church. Only	1,500,000	0	20,015,995	20,015,995	28.49	12.65	4.07	680,000	1,657,000	2,281,000	20,015,995	53,458,000	73,473,995	13.34	35.64	48.98
Cars	Church.+Load	500,000	0	2,581,133	2,581,133	28.49	12.65	4.07	680,000	1,657,000	2,281,000	2,581,133	20,898,000	23,479,133	5.16	41.80	46.96
Using	Church.+Load	1,000,000	0	5,162,266	5,162,266	28.49	12.65	4.07	680,000	1,657,000	2,281,000	5,162,266	37,178,000	42,340,266	5.16	37.18	42.34
New	Church.+Load	1,500,000	0	7,743,400	7,743,400	28.49	12.65	4.07	680,000	1,657,000	2,281,000	7,743,400	53,458,000	61,201,400	5.16	35.64	40.80
Roller	All lines	500,000	0	2,612,155	2,612,155	28.49	12.65	4.07	680,000	1,657,000	2,281,000	2,612,155	20,898,000	23,510,155	5.22	41.80	47.02
Bearings	All lines	1,000,000	0	5,224,311	5,224,311	28.49	12.65	4.07	680,000	1,657,000	2,281,000	5,224,311	37,178,000	42,402,311	5.22	37.18	42.40
	All lines	1,500,000	0	7,836,466	7,836,466	28.49	12.65	4.07	680,000	1,657,000	2,281,000	7,836,466	53,458,000	61,294,466	5.22	35.64	40.86
	Church. Only	500,000	0	11,556,845	11,556,845	28.49	11.16	2.58	680,000	1,657,000	2,281,000	11,556,845	20,153,000	31,709,845	23.11	40.31	63.42
	Church. Only	1,000,000	0	23,113,690	23,113,690	28.49	11.16	2.58	680,000	1,657,000	2,281,000	23,113,690	35,688,000	58,801,690	23.11	35.69	58.80
Purchase	Church. Only	1,500,000	0	34,670,535	34,670,535	28.49	11.16	2.58	680,000	1,657,000	2,281,000	34,670,535	51,223,000	85,893,535	23.11	34.15	57.26
Articulated	Church.+Load	500,000	0	2,889,211	2,889,211	28.49	11.16	2.58	680,000	1,657,000	2,281,000	2,889,211	20,153,000	23,042,211	5.78	40.31	46.08
Hopper	Church.+Load	1,000,000	0	5,778,423	5,778,423	28.49	11.16	2.58	680,000	1,657,000	2,281,000	5,778,423	35,688,000	41,466,423	5.78	35.69	41.47
Cars	Church.+Load	1,500,000	0	8,667,634	8,667,634	28.49	11.16	2.58	680,000	1,657,000	2,281,000	8,667,634	51,223,000	59,890,634	5.78	34.15	39.93
	All lines	500,000	0	3,844,468	3,844,468	28.49	11.16	2.58	680,000	1,657,000	2,281,000	3,844,468	20,153,000	23,997,468	7.69	40.31	47.99
	All lines	1,000,000	0	7,688,935	7,688,935	28.49	11.16	2.58	680,000	1,657,000	2,281,000	7,688,935	35,688,000	43,376,935	7.69	35.69	43.38
	All lines	1,500,000	0	11,533,403	11,533,403	28.49	11.16	2.58	680,000	1,657,000	2,281,000	11,533,403	51,223,000	62,756,403	7.69	34.15	41.84
Rehab.		500,000	4,025,861	2,570,792	6,596,653	28.49	8.58	0	680,000	1,657,000	2,281,000	6,596,653	18,863,000	25,459,653	13.19	37.73	50.92
Rail		1,000,000	4,025,861	5,141,585	9,167,446	28.49	8.58	0	680,000	1,657,000	2,281,000	9,167,446	33,108,000	42,275,446	9.17	33.11	42.28
Line		1,500,000	4,025,861	7,712,377	11,738,238	28.49	8.58	0	680,000	1,657,000	2,281,000	11,738,238	47,353,000	59,091,238	7.83	31.57	39.39

NOTE: (1) Total Annual Rail Cost to ship grain from a central Saskatchewan location to Churchill for the alternative noted.
(2) WGTA Rail Rate obtained from Annual Rate Scale for the 1989–90 Crop Year.
(3) Operating costs equal the WGTA rail rate plus the operating costs above conventional hoppers plus the subsidies and losses noted.

Table A4 Total Transportation Cost Comparision between Churchill and Montreal as a Function of Marine Freight Rates (1)

Marine Freight Rate	Investment Alternative	Volume (t/yr)	Port	Farm to Primary Elevator (7) ($/t)	Primary Elevator Costs (8) ($/t)	Rail Freight Costs (9) ($/t)	Terminal Elevator Costs (10) ($/t)	Lake Charges (11) ($/t)	Trans-Shipment Costs (12) ($/t)	Ocean Marine Freight Costs (13) ($/t)	Total Trans. Costs ($/t)	Total Trans. Cost Advantage for Churchill ($/t)
High Ocean Freight Rate												
	Box Car – Friction (2)	500,000	Churchill	6.11	9.31	50.07	7.61	0.00	0.00	34.90	108.00	-6.65
	Box Car – Roller (3)	500,000	Churchill	6.11	9.31	46.96	7.61	0.00	0.00	34.90	104.89	-3.54
	Articulated Car (4)	500,000	Churchill	6.11	9.31	46.08	7.61	0.00	0.00	34.90	104.01	-2.66
	Rehab. Line (5)	500,000	Churchill	6.11	9.31	50.92	7.61	0.00	0.00	34.90	108.85	-7.50
	Box Car – Friction (2)	1,000,000	Churchill	6.11	9.31	45.45	7.61	0.00	0.00	34.90	103.38	-2.03
	Box Car – Roller (3)	1,000,000	Churchill	6.11	9.31	42.34	7.61	0.00	0.00	34.90	100.27	1.08
	Articulated Car (4)	1,000,000	Churchill	6.11	9.31	41.47	7.61	0.00	0.00	34.90	99.40	1.95
	Rehab. Line (5)	1,000,000	Churchill	6.11	9.31	42.28	7.61	0.00	0.00	34.90	100.21	1.14
	Box Car – Friction (2)	1,500,000	Churchill	6.11	9.31	43.91	7.61	0.00	0.00	34.90	101.84	-0.49
	Box Car – Roller (3)	1,500,000	Churchill	6.11	9.31	40.80	7.61	0.00	0.00	34.90	98.73	2.62
	Articulated Car (4)	1,500,000	Churchill	6.11	9.31	39.93	7.61	0.00	0.00	34.90	97.86	3.49
	Rehab. Line (5)	1,500,000	Churchill	6.11	9.31	39.39	7.61	0.00	0.00	34.90	97.32	4.03
			Montreal (6)	6.11	9.31	35.14	6.61	16.60	3.58	24.00	101.35	
Medium Ocean Freight Rate												
	Box Car – Friction (2)	500,000	Churchill	6.11	9.31	50.07	7.61	0.00	0.00	23.30	96.40	-4.45
	Box Car – Roller (3)	500,000	Churchill	6.11	9.31	46.96	7.61	0.00	0.00	23.30	93.29	-1.34
	Articulated Car (4)	500,000	Churchill	6.11	9.31	46.08	7.61	0.00	0.00	23.30	92.41	-0.46
	Rehab. Line (5)	500,000	Churchill	6.11	9.31	50.92	7.61	0.00	0.00	23.30	97.25	-5.30
	Box Car – Friction (2)	1,000,000	Churchill	6.11	9.31	45.45	7.61	0.00	0.00	23.30	91.78	0.17
	Box Car – Roller (3)	1,000,000	Churchill	6.11	9.31	42.34	7.61	0.00	0.00	23.30	88.67	3.28
	Articulated Car (4)	1,000,000	Churchill	6.11	9.31	41.47	7.61	0.00	0.00	23.30	87.80	4.15
	Rehab. Line (5)	1,000,000	Churchill	6.11	9.31	42.28	7.61	0.00	0.00	23.30	88.61	3.34
	Box Car – Friction (2)	1,500,000	Churchill	6.11	9.31	43.91	7.61	0.00	0.00	23.30	90.24	1.71
	Box Car – Roller (3)	1,500,000	Churchill	6.11	9.31	40.80	7.61	0.00	0.00	23.30	87.13	4.82
	Articulated Car (4)	1,500,000	Churchill	6.11	9.31	39.93	7.61	0.00	0.00	23.30	86.26	5.69
	Rehab. Line (5)	1,500,000	Churchill	6.11	9.31	39.39	7.61	0.00	0.00	23.30	85.72	6.23
			Montreal	6.11	9.31	35.14	6.61	16.60	3.58	14.60	91.95	
Low Ocean Freight Rate												
	Box Car – Friction (2)	500,000	Churchill	6.11	9.31	50.07	7.61	0.00	0.00	15.30	88.40	0.05
	Box Car – Roller (3)	500,000	Churchill	6.11	9.31	46.96	7.61	0.00	0.00	15.30	85.29	3.16
	Articulated Car (4)	500,000	Churchill	6.11	9.31	46.08	7.61	0.00	0.00	15.30	84.41	4.04
	Rehab. Line (5)	500,000	Churchill	6.11	9.31	50.92	7.61	0.00	0.00	15.30	89.25	-0.80
	Box Car – Friction (2)	1,000,000	Churchill	6.11	9.31	45.45	7.61	0.00	0.00	15.30	83.78	4.67
	Box Car – Roller (3)	1,000,000	Churchill	6.11	9.31	42.34	7.61	0.00	0.00	15.30	80.67	7.78
	Articulated Car (4)	1,000,000	Churchill	6.11	9.31	41.47	7.61	0.00	0.00	15.30	79.80	8.65
	Rehab. Line (5)	1,000,000	Churchill	6.11	9.31	42.28	7.61	0.00	0.00	15.30	80.61	7.84
	Box Car – Friction (2)	1,500,000	Churchill	6.11	9.31	43.91	7.61	0.00	0.00	15.30	82.24	6.21
	Box Car – Roller (3)	1,500,000	Churchill	6.11	9.31	40.80	7.61	0.00	0.00	15.30	79.13	9.32
	Articulated Car (4)	1,500,000	Churchill	6.11	9.31	39.93	7.61	0.00	0.00	15.30	78.26	10.19
	Rehab. Line (5)	1,500,000	Churchill	6.11	9.31	39.39	7.61	0.00	0.00	15.30	77.72	10.73
			Montreal	6.11	9.31	35.14	6.61	16.60	3.58	11.10	88.45	

Notes to Table A4:

(1) Costs calculated for the haul from a central Saskatchewan location to North West Europe via the alternatives and routes given in the table for the tonnage levels noted, in 1990$'s.
(2) Costs assume box car utilized on the Churchill rail line only (ie. 4.5 turns per year).
(3) Costs assume box car utilized on the Churchill line and other load restricted lines.
(4) Costs assume articulated car utilized on the Churchill line and other load restricted lines.
(5) Costs assume Churchill line rehabilitated and conventional hopper cars are utilized.
(6) Costs assume conventional hopper cars utilized from a central Saskatchewan location to Thunder Bay.
(7) Assumes a 12 tonne truck hauling an average distance of 10 miles. From Alberta Transportation.
(8) Includes elevation and dockage. From Canada Grains Council, 1990.
(9) Rates for shipments via the Port of Churchill are as calculated in Table A3. These rates include WGTA freight rate plus the branch line subsidies plus capital cost associated with the rail line and rail cars. For shipments via the Port of Montreal, costs include the WGTA freight rate plus a capital cost for hopper cars.
(10) Costs for Thunder Bay obtained from Canada Grains Council, 1990. A $1 per tonne premium is added to the Port of Churchill as estimated in the IBI, 1986 report.
(11) Includes lake freight, lake brokerage, cargo rates, insurance and seaway tolls. Obtained from the Canadian Grains Council, 1990.
(12) Includes outward elevation, outward inspection, weighing, superintendance, warfage and and forwarding brokerage charges. Obtained from the Canadian Grains Council, 1990.
(13) Voyage charter rates. Obtained from IBI Group, 1986.

Appendix B

Calculation of the Potential Impact on Saskatchewan Producers of Pooling Proposals

Appendix B Calculation of the Impact on Saskatchewan Producers of Price Pooling Proposals

This Appendix presents the detailed calculations on the potential impact on Saskatchewan producers of changes in the Canadian Wheat Boards current price pooling policy. This analysis considerers both the CWB price pooling proposal and the NGB price pooling proposal. Both proposals are evaluated with and without including Churchill as a pooling point.

The analysis was conducted on a crop district basis and included all four western provinces. Data on total production by crop district by export port was obtained from "GrainBase", a computer data base developed and distributed by Canada Grains Council (1988). All the data used in the analysis was for the 1986/87 crop year. The producer and government WGTA rail rates were also obtained from GrainBase. Additional pricing information was obtained from the report "Canadian Grains Industry Statistical Handbook 90", published by Canada Grains Council.

"Port Terminal Charges" were set at $6.07 per tonne for Thunder Bay, $6.06 per tonne for Vancouver and Prince Rupert, and at $7.06 per tonne for Churchill. Port Terminal Charges included storage and fobbing, as defined in the Handbook.

"Laker Charges" were set at $17.55 per tonne and included lake freight, lake brokerage, cargo rates, insurance, tolls and inward elevation.

"Transhipment Charges" were set at $3.26 per tonne and included storage and fobbing charges.

"Primary Elevator" costs were set at $6.27 per tonne and included elevation only.

"Marketing Charges" were set at $1.64 per tonne and included interest, bank charges and CWB administrative costs.

A "Port Differential" charge of $8.00 per tonne was added to all shipments headed through the Port of Churchill.

The methodology used to estimate the total transportation costs incurred by Saskatchewan producers under the various proposals is illustrated in Figure B1.

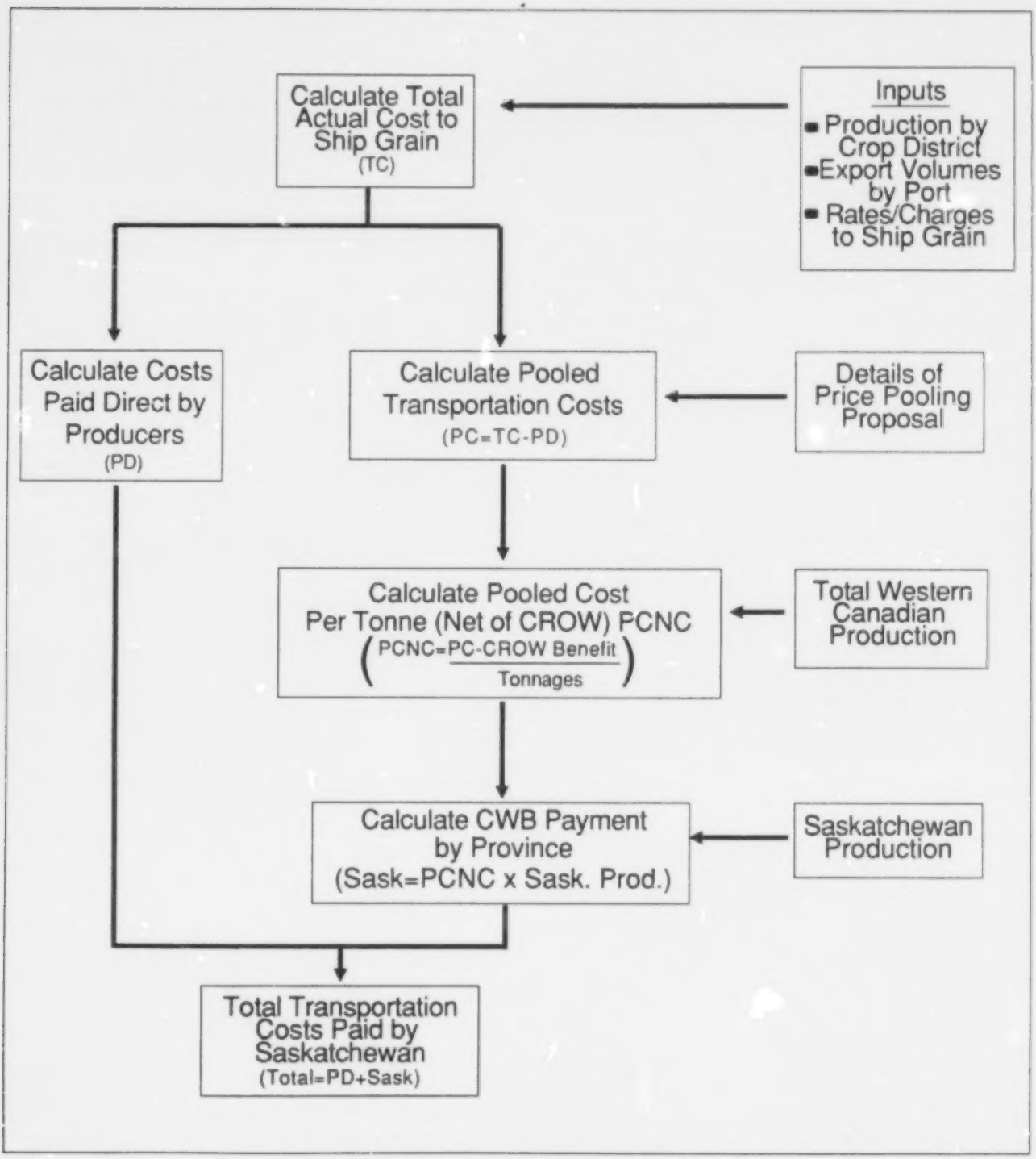
Calculate Total Actual Cost to Ship Grain (TC)
Inputs
Production by Crop District
Export Volumes by Port
Rates/Charges to Ship Grain
Calculate Costs Paid Direct by Producers (PD)
Calculate Pooled Transportation Costs (PC=TC-PD)
Details of Price Pooling Proposal
Calculate Pooled Cost Per Tonne (Net of CROW) PCNC (PCNC=PC-CROW Benefit / Tonnages)
Total Western Canadian Production
Calculate CWB Payment by Province (Sask=PCNC x Sask. Prod.)
Saskatchewan Production
Total Transportation Costs Paid by Saskatchewan (Total=PD+Sask)

Figure B1

Methodology Used to Calculate Total Transportation Costs Paid by Saskatchewan Producers Under Alternative Price Pooling Policies

Table B1 An Estimate of Saskatchewan's Total Grain Transportation Costs Under the Canadian Wheat Board's Current Price Pooling Policy

Prov.	Crop Dist.	Port of Exp.	Tonnage	Haul Distance Low (miles)	Haul Distance High (mi	Producer WGTA RATE $/t	GOVT WGTA RATE $/t	PRODUCER WGTA PAYMENT ($)	GOVT PAYMENT ($)	TOTAL WGTA PAYMENT ($)	PORT TERMINAL CHARGES ($)	LAKER CHARGES ($)	TRANS-SHIPMENT CHARGES ($)	PRIMARY ELEVATOR ($)	MARKETING CHARGES ($)	PORT DIFFER-ENTIALS BASIS=VANC. ($)	TOTAL ACTUAL COST ($)	TOTAL PAID DIRECT BY PRODUCER ($)	TOTAL POOLED COSTS ($)
ALB	1	1	750,013	978	1000	6.27	26.20	4,894,327	19,579,390	24,263,718	4,545,079	0	0	4,702,582	1,230,021	0	34,741,399		
ALB	1	2	110,462	1017	1041	6.43	26.87	707,709	2,957,565	3,665,274	669,521	0	0	692,722	181,190	0	5,208,706		
ALB	1	3	118,189	1068	1112	6.71	28.05	792,798	3,315,586	4,108,352	717,268	2,073,666	385,231	740,920	193,797	0	8,219,452		
			978,664			6.27								6,136,223			48,169,558	12,272,447	35,897,112
ALB	2	1	1,534,598	871	895	5.85	24.47	8,978,988	37,548,871	46,527,839	9,299,884	0	0	9,821,929	2,518,741	0	67,968,173		
ALB	2	2	128,141	889	913	5.92	24.78	755,125	3,157,305	3,912,430	778,534	0	0	803,444	210,151	0	5,702,560		
ALB	2	3	210,530	1209	1233	7.28	30.34	1,514,713	6,331,916	7,846,629	1,277,917	3,894,802	696,328	1,320,023	345,269	0	15,170,968		
			1,873,269			5.85								11,745,397			88,839,701	22,704,020	66,135,681
ALB	3	1	969,110	809	833	5.81	23.48	5,005,968	20,926,887	25,932,855	5,388,007	0	0	5,574,720	1,458,140	0	38,353,722		
ALB	3	2	20,293	787	811	5.52	23.09	112,879	470,952	583,830	122,976	0	0	127,237	33,281	0	867,123		
ALB	3	3	78,528	1236	1262	7.41	30.96	588,836	2,377,099	2,945,935	494,513	1,343,031	249,475	479,818	125,503	0	5,808,275		
			985,929			5.81								6,181,775			44,829,119	11,712,637	33,116,283
ALB	4	1	1,527,400	877	901	5.88	24.57	8,995,615	37,199,579	46,095,194	9,256,044	0	0	9,576,798	2,504,936	0	67,432,972		
ALB	4	2	678,011	852	876	5.76	24.17	3,916,983	16,379,554	20,296,517	4,108,747	0	0	4,251,129	1,111,936	0	29,768,330		
ALB	4	3	242,460	1151	1175	6.97	29.13	1,691,839	6,907,711	8,599,550	1,471,914	4,255,700	790,517	1,520,412	397,684	0	16,985,777		
ALB	4	4	29,284	1048	1072	6.55	27.40	190,855	797,760	988,615	208,745	0	0	183,811	48,026	234,272	1,661,269		
			2,477,155			5.88								15,531,950			115,858,348	30,097,798	85,760,550
ALB	5	1	751,954	880	894	5.81	24.29	4,330,083	18,107,043	22,437,106	4,556,841	0	0	4,714,752	1,233,205	0	32,941,903		
ALB	5	2	165,789	857	881	5.80	24.25	939,720	3,929,722	4,869,443	1,004,681	0	0	1,039,497	271,894	0	7,185,515		
ALB	5	3	68,953	1248	1272	7.48	31.24	516,838	2,159,717	2,676,555	418,545	1,210,125	224,787	432,335	113,083	0	5,075,430		
ALB	5	4	13,582	1183	1207	7.12	29.75	96,161	401,978	498,158	85,889	0	0	85,159	22,274	108,856	810,135		
			1,000,278			5.81								6,271,743			46,012,983	12,063,358	33,929,625
ALB	6	1	384,137	826	850	5.68	23.73	2,072,961	8,666,277	10,739,287	2,208,670	0	0	2,283,139	597,165	0	15,828,261		
ALB	6	2	205,583	824	848	5.67	23.70	1,166,354	4,866,362	6,057,738	1,245,833	0	0	1,288,005	337,158	0	8,929,731		
ALB	6	3	96,412	1283	1307	7.70	32.18	748,886	3,122,120	3,869,005	585,221	1,892,031	314,303	604,503	158,116	0	7,223,179		
ALB	6	4	25,906	1202	1226	7.20	30.10	187,536	783,756	971,292	162,898	0	0	162,431	42,466	207,248	1,586,353		
			682,038			5.88								4,339,078			33,545,524	8,268,854	25,275,670
ALB	7	1	545,236	929	953	6.08	25.42	3,378,511	14,124,455	17,502,967	3,304,130	0	0	3,418,630	894,187	0	25,119,914		
ALB	7	2	467,004	932	956	6.10	25.48	2,922,058	11,796,837	14,620,895	2,830,044	0	0	2,929,115	765,887	0	21,144,941		
ALB	7	3	86,551	1567	1591	9.40	39.31	814,020	3,404,072	4,218,092	525,425	1,519,146	282,186	542,737	141,960	0	7,229,549		
ALB	7	4	24,719	1478	1502	8.86	37.04	215,871	901,537	1,117,208	174,516	0	0	154,988	40,538	197,752	1,685,003		
			1,123,520			6.08								7,044,470			55,179,408	13,875,472	41,303,936
Alberta			9,130,883														432,434,642	111,015,785	321,418,857

Table B : (Cont'd)

BC	1	1	13,129	984	708	5.12	21.40	67,990	284,553	352,543	79,562	0	0	82,319	21,532	0	535,955		
BC	1	2	1,831	761	725	5.18	21.68	9,495	38,696	48,191	11,096	0	0	11,480	3,003	0	74,780		
BC	1	3	1,004	1694	1708	10.11	42.27	10,854	45,396	56,251	8,094	17,820	3,273	8,295	1,647	0	91,160		
			15,964			5.12								100,094			701,895	181,830	520,065
BC	7	1	143,259	756	780	5.40	22.58	749,014	3,134,277	3,883,290	868,150	0	0	898,234	234,945	0	5,884,619		
BC	7	2	54,564	756	780	5.40	22.58	283,875	1,187,185	1,470,860	330,658	0	0	342,116	89,485	0	2,233,119		
BC	7	3	10,800	1798	1780	10.81	44.34	113,365	473,802	587,267	86,163	191,295	35,534	88,343	17,879	0	998,479		
BC	7	4	1,787	1826	1830	9.76	40.83	17,441	72,983	90,404	12,818	0	0	11,204	2,831	14,298	131,452		
			210,510			5.40								1,319,898			9,215,667	2,456,852	6,758,816
British Columbia			226,474														9,917,562	2,638,682	7,279,080
MAN	1	1	84,154	1539	1583	9.23	38.59	497,869	2,081,583	2,579,452	329,173	0	0	339,546	88,813	0	3,335,983		
MAN	1	2	2,151	1506	1560	9.33	39.02	22,057	92,209	114,264	13,035	0	0	13,487	3,528	0	144,313		
MAN	1	3	555,119	567	621	4.77	19.96	2,849,700	11,080,822	13,730,522	3,389,572	9,742,338	1,809,686	3,480,596	910,385	0	33,043,112		
MAN	1	4	0	1131	1155	6.88	28.76	0	0	0	0	0	0	0	0	0	0		
			611,424			4.77								3,833,609			36,523,408	6,750,121	29,773,287
MAN	2	1	94,712	1434	1448	8.53	35.65	561,879	2,308,254	2,857,933	392,155	0	0	405,744	106,128	0	3,781,960		
MAN	2	2	15,778	1426	1453	8.58	35.79	133,808	558,446	682,054	95,803	0	0	98,916	25,873	0	912,445		
MAN	2	3	609,886	562	598	4.84	19.39	2,835,312	11,883,162	14,898,474	3,700,794	10,899,969	1,987,576	3,822,731	999,885	0	35,909,450		
MAN	2	4	883	909	933	6.00	25.11	5,140	21,508	26,648	6,234	0	0	5,538	1,448	7,084	46,930		
			691,057			4.84								4,332,927			40,630,785	7,539,432	33,091,353
MAN	3	1	54,820	1515	1539	9.09	38.00	488,185	2,044,933	2,534,118	332,209	0	0	343,721	89,905	0	3,298,953		
MAN	3	2	25,050	1516	1543	9.11	38.09	210,888	881,885	1,092,871	151,884	0	0	157,128	41,098	0	1,442,959		
MAN	3	3	513,803	577	601	4.89	19.84	2,403,224	10,054,038	12,457,263	3,117,570	9,013,733	1,674,346	3,220,291	842,309	0	30,325,511		
MAN	3	4	7,003	917	941	6.03	25.23	42,485	177,849	220,134	49,562	0	0	44,034	11,518	58,164	381,452		
			600,506			4.89								3,765,173			35,449,875	6,581,948	28,868,329
MAN	4	1	17,765	1495	1519	6.98	37.49	152,811	638,295	790,806	107,858	0	0	111,387	29,130	0	1,039,083		
MAN	4	2	19,809	1501	1525	9.00	37.64	166,112	694,777	860,889	118,831	0	0	122,948	32,159	0	1,134,828		
MAN	4	3	151,708	639	663	4.84	20.65	748,014	3,126,174	3,874,187	920,898	2,662,475	494,568	951,209	248,801	0	9,152,109		
MAN	4	4	4,803	922	946	6.06	39.32	26,737	111,764	138,501	32,487	0	0	28,661	7,549	36,824	244,231		
			193,885			4.84								1,214,405			11,570,249	2,171,209	9,399,040
MAN	5	1	20,538	1371	1395	8.21	34.33	184,577	771,560	956,170	136,568	0	0	141,301	36,959	0	1,270,998		
MAN	5	2	45,780	1371	1395	8.21	34.33	375,137	1,568,185	1,943,321	277,487	0	0	287,103	75,096	0	2,583,007		
MAN	5	3	184,809	714	738	5.24	21.90	885,465	3,821,629	4,487,083	986,177	2,888,888	536,625	1,032,098	269,959	0	10,213,841		
MAN	5	4	18,102	674	698	5.08	21.22	82,106	343,115	425,220	113,680	0	0	100,960	26,407	128,816	786,084		
			249,037			5.24								1,561,462			14,882,930	3,866,416	11,998,514
MAN	6	1	47,405	1405	1439	8.42	35.18	398,909	1,668,711	2,055,619	287,274	0	0	297,229	77,744	0	2,717,867		
MAN	6	2	73,233	1405	1439	8.42	35.18	616,704	2,582,375	3,183,088	443,782	0	0	458,171	120,102	0	4,186,164		
MAN	6	3	217,840	588	623	4.78	20.00	1,047,184	4,378,470	5,425,635	1,321,075	3,819,582	709,506	1,364,803	356,930	0	12,997,330		
MAN	6	4	20,090	790	814	5.53	23.13	110,591	462,301	572,892	141,935	0	0	125,964	32,948	160,720	1,034,359		
			358,368			4.78								2,246,967			20,935,720	3,959,999	16,975,754

Table B1 (Cont'd)

MAN	7	1	69,387	1520	1544	9.12	38.12	636,732	2,662,257	3,298,989	420,384	0	0	434,831	113,782	0	4,268,048		
MAN	7	2	17,153	1508	1533	9.05	37.84	153,267	640,871	794,237	103,947	0	0	107,549	28,131	0	1,033,885		
MAN	7	3	632,388	470	494	4.27	17.87	2,709,520	11,315,337	14,021,958	3,839,583	11,096,374	2,091,579	3,985,080	1,037,113	0	39,022,587		
MAN	7	4	0	915	939	8.09	25.20	0	0	0	0	0	0	0	0	0	0		
			718,928			4.27								4,527,541			41,324,477	7,577,289	33,747,208
MAN	8	1	57,830	1579	1603	9.47	39.62	543,883	2,273,852	2,817,748	349,177	0	0	361,277	94,497	0	3,622,987		
MAN	8	2	4,449	1563	1617	9.58	39.88	43,809	183,209	227,036	28,881	0	0	27,895	7,299	0	286,190		
MAN	8	3	712,857	498	520	4.38	18.30	3,123,907	13,061,771	16,185,678	4,327,042	12,510,840	2,323,914	4,469,613	1,169,083	0	40,985,973		
MAN	8	4	0	1630	1654	8.48	27.10	0	0	0	0	0	0	0	0	0	0		
			774,689			4.38								4,858,798			44,897,980	8,252,992	36,644,989
MAN	9	1	39,090	1583	1617	9.39	38.98	340,308	1,035,821	1,270,668	156,139	0	0	163,810	42,796	0	1,658,475		
MAN	9	2	190	1585	1580	9.39	38.27	1,475	6,168	7,643	943	0	0	978	256	0	9,823		
MAN	9	3	227,269	414	436	4.05	16.84	821,865	3,833,378	4,777,243	1,381,485	3,994,187	741,940	1,426,983	373,248	0	12,886,084		
MAN	9	4	0	980	1004	8.29	26.27	0	0	0	0	0	0	0	0	0	0		
			253,840			4.05								1,591,577			14,340,381	2,819,626	11,720,733
MAN	10	1	490	1632	1656	9.80	40.99	4,789	20,035	24,825	2,969	0	0	3,072	804	0	31,870		
MAN	10	3	5,299	351	375	3.80	15.89	21,038	88,041	109,077	32,165	92,997	17,275	33,225	8,690	0	293,429		
			5,789			3.80								36,297			325,099	58,295	266,804
MAN	11	1	6,426	1584	1608	9.50	39.73	61,343	256,569	317,912	38,954	0	0	40,304	10,542	0	407,711		
MAN	11	2	1,726	1566	1592	9.41	39.33	16,308	68,184	84,472	10,460	0	0	10,822	2,831	0	108,584		
MAN	11	3	125,116	439	463	4.15	17.36	519,840	2,173,864	2,693,724	759,454	2,195,786	407,878	784,477	205,190	0	7,046,510		
MAN	11	4	57	984	1008	8.30	26.34	357	1,493	1,851	402	0	0	357	93	456	3,160		
			133,327			4.15								835,960			7,565,965	1,389,267	6,176,698
MAN	12	1	9,188	1644	1668	9.86	41.26	91,018	380,898	471,716	55,879	0	0	57,809	15,068	0	600,072		
MAN	12	2	602	1651	1675	9.91	41.45	5,966	24,953	30,919	3,648	0	0	3,775	987	0	39,329		
MAN	12	3	54,881	520	544	4.47	18.70	238,754	997,952	1,236,706	333,128	963,182	178,912	344,104	90,005	0	3,146,016		
			64,671			4.47								405,487			3,785,417	694,567	3,090,850
Manitoba			4,855,536														272,212,148	50,460,679	221,751,469
SASK 1a		1	117,830	1352	1376	8.09	33.85	945,127	3,952,260	4,897,388	714,050	0	0	736,794	193,241	0	6,543,473		
SASK 1a		2	36,875	1355	1379	6.12	33.93	297,196	1,242,701	1,539,898	222,251	0	0	229,952	60,147	0	2,052,247		
SASK 1a		3	705,239	669	693	5.06	21.14	3,546,913	14,824,044	18,370,957	4,280,801	12,376,944	2,299,079	4,421,849	1,156,592	0	42,906,222		
SASK 1a		4	1,552	959	983	6.20	25.93	9,731	40,662	50,393	10,957	0	0	9,731	2,545	12,416	86,043		
			861,296			5.06								5,400,326			51,587,985	9,756,484	41,829,501
SASK 1b		1	62,726	1345	1369	8.05	33.87	494,382	2,067,061	2,561,444	360,132	0	0	393,305	102,874	0	3,437,754		
SASK 1b		2	131,467	1345	1369	8.05	33.87	1,061,634	4,439,095	5,500,729	796,690	0	0	824,298	215,606	0	7,337,323		
SASK 1b		3	487,910	670	694	5.06	21.17	2,462,562	10,292,992	12,755,554	2,961,614	8,562,821	1,590,587	3,059,196	800,172	0	29,729,942		
SASK 1b		4	2,568	941	965	6.14	25.67	15,886	66,399	82,285	18,116	0	0	15,089	4,208	20,528	141,226		
			684,671			5.06								4,292,887			40,646,246	7,757,322	32,888,923

Table B1 (Cont'd)

SASK 2a	1	140,079	1285	1309	7.69	32.15	1,078,885	4,509,930	5,588,826	846,879	0	0	878,295	229,730	0	7,545,729			
SASK 2a	2	13,714	1301	1325	7.79	32.56	105,760	442,064	547,823	83,107	0	0	85,967	22,491	0	739,406			
SASK 2a	3	601,764	730	754	5.29	22.15	3,191,162	13,349,745	16,540,907	3,652,707	10,560,958	1,961,751	3,773,060	986,893	0	37,476,277			
SASK 2a	4	0	903	927	5.98	25.01	0	0	0	0	0	0	0	0	0	0			
		755,557			5.29								4,737,342			45,761,414	8,734,239	37,027,175	
SASK 2b	1	277,890	1242	1266	7.43	31.06	2,015,801	8,424,277	10,440,078	1,684,013	0	0	1,742,370	455,740	0	14,322,201			
SASK 2b	2	76,665	1268	1292	7.59	31.71	597,753	2,498,197	3,095,950	476,831	0	0	493,355	129,043	0	4,193,179			
SASK 2b	3	775,576	769	793	5.45	22.79	4,232,137	17,694,566	21,926,705	4,707,746	13,611,359	2,526,378	4,862,862	1,271,945	0	48,908,994			
SASK 2b	4	0	856	880	5.79	24.23	0	0	0	0	0	0	0	0	0	0			
		1,132,151			5.45								7,098,587			67,426,374	13,298,810	54,157,565	
SASK 3an	1	117,977	1204	1228	7.25	30.33	854,066	3,612,066	4,476,154	714,941	0	0	739,716	193,462	0	6,124,293			
SASK 3an	2	731	1311	1335	7.85	32.82	5,669	24,543	30,412	4,430	0	0	4,583	1,199	0	40,624			
SASK 3an	3	294,603	864	888	5.62	24.36	1,719,957	7,196,328	8,916,285	1,788,240	5,170,283	980,406	1,847,161	483,149	0	19,165,523			
SASK 3an	4	0	841	865	6.13	25.63	0	0	0	0	0	0	0	0	0	0			
		413,311			5.62								2,591,460			25,330,439	4,986,930	20,333,510	
SASK 3as	1	172,098	1269	1293	7.60	31.78	1,328,969	5,554,848	6,883,817	1,042,914	0	0	1,079,054	282,241	0	9,287,826			
SASK 3as	2	13,147	1378	1402	8.24	34.44	108,508	453,553	562,059	79,671	0	0	82,432	21,581	0	745,723			
SASK 3as	3	635,392	822	846	5.66	23.67	3,598,862	15,042,003	18,638,865	3,856,829	11,151,130	2,071,378	3,963,908	1,042,043	0	40,744,152			
SASK 3as	4	0	968	992	6.24	26.06	0	0	0	0	0	0	0	0	0	0			
		820,637			5.66								5,145,394			50,777,701	9,760,199	40,987,502	
SASK 3bn	1	266,540	1112	1136	6.81	28.46	1,805,312	7,546,774	9,354,085	1,615,232	0	0	1,671,208	437,128	0	13,077,849			
SASK 3bn	2	7,252	1161	1185	7.00	29.27	50,814	212,393	263,208	43,947	0	0	45,470	11,893	0	384,516			
SASK 3bn	3	478,668	956	982	6.20	25.91	2,962,945	12,386,524	15,351,469	2,905,515	8,400,823	1,560,456	3,001,246	785,016	0	32,004,326			
SASK 3bn	4	264	951	975	6.17	25.79	1,608	6,721	8,329	1,884	0	0	1,655	433	2,112	14,393			
		752,724			6.20								4,719,579			45,480,866	9,386,488	36,074,420	
SASK 3bs	1	108,446	1141	1165	6.93	28.99	743,761	3,109,519	3,853,280	657,195	0	0	679,969	177,855	0	5,388,299			
SASK 3bs	3	448,214	944	968	6.14	25.67	2,767,895	11,573,941	14,341,836	2,720,859	7,866,156	1,461,178	2,810,302	735,071	0	29,935,001			
		556,662			6.14								3,490,271			35,303,300	6,908,175	28,395,124	
SASK 4a	1	51,874	1061	1085	6.60	27.62	339,775	1,420,419	1,760,194	314,358	0	0	325,250	85,073	0	2,484,874			
SASK 4a	3	201,669	1003	1027	6.38	26.65	1,293,446	5,406,870	6,700,316	1,224,131	3,539,291	657,441	1,264,465	330,737	0	13,716,360			
		253,543			6.38								1,589,715			16,201,254	3,207,319	12,993,935	
SASK 4b	1	280,874	1012	1036	6.41	26.80	1,867,741	7,807,068	9,674,809	1,762,898	0	0	1,823,780	477,033	0	13,736,316			
SASK 4b	2	84	1001	1025	6.37	26.61	535	2,235	2,770	509	0	0	527	138	0	3,944			
SASK 4b	3	156,464	1004	1028	6.38	26.66	1,004,295	4,196,814	5,201,109	961,876	2,781,043	516,593	993,569	259,881	0	10,714,072			
		449,422			6.38								2,817,876			24,456,334	5,685,188	18,771,146	
SASK 5a	1	235,941	1322	1346	7.91	33.09	1,867,298	7,807,275	9,674,573	1,429,802	0	0	1,479,350	386,943	0	12,970,859			
SASK 5a	2	206,166	1274	1298	7.62	31.86	1,548,022	6,470,365	8,018,408	1,249,366	0	0	1,292,661	338,112	0	10,898,545			
SASK 5a	3	807,742	713	737	5.23	21.87	4,225,395	17,665,755	21,891,150	4,902,994	14,175,672	2,633,239	5,064,542	1,324,697	0	49,992,494			
SASK 5a	4	13,150	754	778	5.39	22.54	70,097	293,208	363,304	92,639	0	0	82,451	21,566	105,200	665,360			
		1,262,999			5.23								7,919,004			74,527,058	14,524,469	60,002,590	

Table B1 (Cont'd)

SASK 5b	1	290,886	1300	1324	7.79	32.57	2,295,229	9,595,500	11,890,730	1,763,375	0	0	1,824,482	477,217	0	15,955,804		
SASK 5b	2	203,672	1274	1298	7.62	31.87	1,529,317	6,393,249	7,922,566	1,234,252	0	0	1,277,023	334,022	0	10,767,863		
SASK 5b	3	622,851	755	779	5.39	22.56	4,444,877	18,567,373	23,032,051	4,994,708	14,441,035	2,682,494	5,159,276	1,349,476	0	51,659,037		
SASK 5b	4	82,776	713	737	5.23	21.86	432,798	1,810,028	2,242,822	584,399	0	0	519,008	135,753	692,208	4,144,187		
		1,400,285			5.39								8,779,787			82,526,892	16,327,323	66,199,568
SASK 6a	1	357,018	1205	1229	7.25	30.32	2,584,940	10,722,284	13,267,224	2,163,517	0	0	2,239,490	585,508	0	18,274,737		
SASK 6a	2	105,029	1153	1177	6.97	29.15	726,123	3,035,307	3,761,430	636,476	0	0	658,532	172,248	0	5,228,885		
SASK 6a	3	740,422	834	858	5.71	23.88	4,234,060	17,705,251	21,939,340	4,494,362	12,994,406	2,413,776	4,642,448	1,214,292	0	47,698,622		
SASK 6a	4	9,568	863	887	5.82	24.34	55,766	233,334	289,099	67,877	0	0	60,104	15,721	76,988	509,290		
		1,212,033			5.71								7,599,572			71,711,334	14,520,385	57,190,939
SASK 6b	1	398,558	1125	1149	6.87	28.71	2,541,421	10,625,745	13,167,166	2,233,461	0	0	2,310,859	604,435	0	18,315,921		
SASK 6b	2	99,966	1101	1125	6.76	28.27	668,623	2,800,493	3,470,116	605,794	0	0	626,787	163,944	0	4,866,841		
SASK 6b	3	438,182	922	946	6.05	25.31	2,652,408	11,091,379	13,743,787	2,665,713	7,707,293	1,431,868	2,753,546	720,228	0	29,022,233		
SASK 6b	4	19,483	850	874	5.77	24.13	110,751	462,985	573,737	137,550	0	0	122,158	31,952	155,864	1,021,261		
		927,189			6.05								5,813,350			53,226,056	11,422,722	41,803,334
SASK 7a	1	394,555	1100	1124	6.76	28.26	2,460,527	10,290,122	12,750,649	2,209,203	0	0	2,285,760	597,870	0	17,843,482		
SASK 7a	2	137,667	1098	1123	6.75	28.24	932,130	3,898,013	4,830,144	834,383	0	0	863,297	225,807	0	6,753,831		
SASK 7a	3	428,722	1020	1044	6.44	26.94	2,736,958	11,440,129	14,177,087	2,602,343	7,524,071	1,397,834	2,688,067	703,104	0	29,092,325		
SASK 7a	4	2,039	850	874	6.16	25.77	12,406	51,871	64,277	14,395	0	0	12,785	3,344	18,312	111,113		
		933,003			6.44								5,849,929			53,800,551	11,856,466	41,942,083
SASK 7b	1	337,436	1030	1054	6.48	27.09	2,170,829	9,071,867	11,242,496	2,044,882	0	0	2,115,724	553,385	0	15,958,477		
SASK 7b	2	160,433	1005	1029	6.36	26.66	1,016,778	4,248,320	5,265,099	972,224	0	0	1,005,915	263,110	0	7,505,348		
SASK 7b	3	281,599	1008	1030	6.39	26.70	1,679,759	7,020,308	8,700,066	1,567,908	4,591,092	852,813	1,640,228	429,022	0	17,801,096		
SASK 7b	4	6,578	927	951	6.08	25.40	39,849	166,624	206,473	46,448	0	0	41,250	10,790	52,632	357,593		
		786,047			6.39								4,803,115			41,621,513	9,698,155	31,923,357
SASK 8a	1	254,185	1260	1314	7.66	32.12	1,994,340	8,211,186	10,175,526	1,540,422	0	0	1,593,803	416,860	0	13,726,630		
SASK 8a	2	110,325	1246	1270	7.45	31.15	814,398	3,403,728	4,218,125	686,570	0	0	691,736	180,933	0	5,759,365		
SASK 8a	3	466,426	849	873	5.77	24.12	2,704,387	11,311,443	14,015,830	2,843,356	8,220,911	1,527,075	2,937,044	768,222	0	30,312,440		
SASK 8a	4	110,407	681	685	5.03	21.02	580,159	2,341,448	2,901,607	779,473	0	0	692,252	181,067	693,256	5,437,855		
		943,355			5.77								5,914,836			55,236,091	11,357,994	43,878,097
SASK 8b	1	207,021	1194	1218	7.19	30.07	1,459,337	6,099,857	7,559,994	1,254,547	0	0	1,298,022	339,514	0	10,451,078		
SASK 8b	2	171,258	1161	1185	7.00	29.26	1,199,077	5,011,819	6,210,895	1,037,811	0	0	1,073,775	280,860	0	8,603,142		
SASK 8b	3	378,930	677	901	5.87	24.57	2,233,511	9,341,823	11,575,333	2,308,175	6,667,772	1,238,572	2,392,161	623,065	0	24,793,008		
SASK 8b	4	66,535	744	768	5.35	22.36	352,110	1,473,060	1,825,170	469,737	0	0	417,174	109,117	532,280	3,353,479		
		824,742			5.87								5,171,132			47,200,707	10,012,366	37,188,429
SASK 9a	1	284,385	1160	1184	7.12	29.77	1,977,235	8,267,245	10,244,480	1,723,434	0	0	1,783,157	466,409	0	14,217,478		
SASK 9a	2	310,397	1065	1109	6.70	28.00	2,071,112	8,659,549	10,730,660	1,881,008	0	0	1,946,189	509,051	0	15,066,906		
SASK 9a	3	440,708	979	1003	6.28	26.25	2,759,160	11,532,609	14,291,990	2,675,065	7,734,390	1,436,702	2,763,227	722,758	0	29,624,151		
SASK 9a	4	95,191	837	861	5.72	23.91	539,230	2,254,807	2,793,836	672,048	0	0	596,848	156,113	761,539	4,980,374		
		1,130,869			6.28								7,089,420			63,888,910	14,190,147	49,698,763

Table B1 (Cont'd)

SASK 9b	1	443,110	1	1068	6.85	27.80	2,849,275	12,328,266	15,277,540	2,865,247	0	0	2,778,300	726,700	0	21,467,787		
SASK 9b	2	214,379	1011	1035	6.41	26.78	1,365,373	5,706,635	7,074,008	1,299,137	0	0	1,344,158	351,582	0	10,068,883		
SASK 9b	3	351,868	1040	1064	6.52	27.27	2,311,703	9,666,960	11,978,663	2,136,448	6,177,038	1,147,416	2,206,839	577,228	0	24,223,656		
SASK 9b	4	38,378	934	958	6.10	25.52	241,316	1,008,816	1,250,136	278,008	0	0	246,900	64,580	315,024	2,154,649		
		1,048,835			6.52								6,576,195			57,914,976	13,414,800	44,500,378
Saskatchewan		17,129,151														1,004,606,124	206,819,796	797,786,328
Total		31,142,044															370,834,741	1,348,235,734

PORTS:

1 = VANCOUVER
2 = PRINCE RUPERT
3 = THUNDER BAY
4 = CHURCHILL

Total Pooled Costs ($) =	1,348,235,734
Crow Benefit ($) =	720,000,000
Total Pooled (Net of Crow) ($) =	628,235,734
($/t) =	20.17

	Paid Direct By Farmers ($)	CWB Payment By Province ($)	Total Paid By Province (Direct + CWB) ($)	($/t)
Alberta	111,015,785	184,199,437	295,215,223	32.33
British Colum.	2,638,482	4,568,713	7,207,195	31.82
Manitoba	50,460,679	93,917,216	144,377,895	31.01
Saskatchewan	206,819,796	345,550,366	552,370,163	32.25

Table B2 An Estimate of Saskatchewan's Total Grain Transportation Costs Under the Canadian Wheat Boards Price Pooling Proposal

Prov.	Crop Dist.	Port of Exp.	Tonnage	Haul Distance Low (miles)	Haul Distance High (mi	Producer WGTA RATE $/t	GOVT WGTA RATE $/t	PRODUCER WGTA PAYMENT $)	GOVT PAYMENT $)	TOTAL WGTA PAYMENT $)	PORT TERMINAL CHARGES $)	LAKER CHARGES $)	TRANS-SHIPMENT CHARGES $)	PRIMARY ELEVATOR $)	MARKETING CHARGES $)	PORT DIFFER-ENTIALS BASIS=VANC. $)	TOTAL ACTUAL COST $)	TOTAL PAID DIRECT BY PRODUCER $)	TOTAL POOLED COSTS $)
ALB	1	1	750,013	976	1000	6.27	26.20	4,864,327	19,579,390	24,263,718	4,545,079	0	0	4,702,582	1,230,021	0	34,741,399		
ALB	1	2	110,482	1017	1041	6.43	26.87	707,709	2,957,565	3,665,274	669,521	0	0	692,722	181,190	0	5,208,708		
ALB	1	3	116,169	1088	1112	6.71	28.05	792,766	3,315,586	4,108,352	717,266	2,073,866	385,231	740,920	193,797	0	8,219,452		
			976,664			6.27								6,136,223			48,169,559	12,272,447	35,897,112
ALB	2	1	1,534,596	871	895	5.85	24.47	8,978,988	37,548,871	46,527,839	9,299,664	0	0	9,821,929	2,516,741	0	67,966,173		
ALB	2	2	126,141	889	913	5.92	24.76	755,125	3,157,305	3,912,430	776,534	0	0	803,444	210,151	0	5,702,560		
ALB	2	3	210,530	1209	1233	7.26	30.34	1,514,713	6,331,916	7,846,629	1,277,917	3,894,602	666,328	1,320,023	345,269	0	15,170,968		
			1,873,269			5.85								11,745,397			88,839,701	22,704,020	66,135,681
ALB	3	1	669,110	809	833	5.61	23.46	5,005,966	20,926,667	25,932,855	5,386,007	0	0	5,574,720	1,456,140	0	38,353,722		
ALB	3	2	20,293	787	811	5.52	23.09	112,879	470,952	583,830	122,976	0	0	127,237	33,281	0	867,123		
ALB	3	3	76,526	1238	1262	7.41	30.96	566,836	2,377,099	2,945,935	464,513	1,343,031	249,475	479,816	125,503	0	5,608,275		
			965,929			5.61								6,181,775			44,829,119	11,712,837	33,116,283
ALB	4	1	1,527,400	877	901	5.86	24.57	8,995,615	37,199,579	46,095,194	9,256,044	0	0	9,576,798	2,504,936	0	67,432,972		
ALB	4	2	676,011	852	876	5.78	24.17	3,916,983	16,379,554	20,296,517	4,106,747	0	0	4,251,129	1,111,936	0	29,768,330		
ALB	4	3	242,490	1151	1175	6.97	29.13	1,691,839	6,907,711	8,559,550	1,471,914	4,255,700	790,517	1,520,412	397,884	0	16,995,777		
ALB	4	4	29,284	1048	1072	6.55	27.40	190,855	797,760	988,615	206,745	0	0	183,611	48,026	234,272	1,661,269		
			2,477,185			5.86								15,531,950			115,858,348	30,097,798	85,760,550
ALB	5	1	751,954	660	684	5.81	24.29	4,330,063	18,107,043	22,437,106	4,556,841	0	0	4,714,752	1,233,205	0	32,941,903		
ALB	5	2	165,789	857	881	5.80	24.25	939,720	3,929,722	4,869,443	1,004,681	0	0	1,039,497	271,894	0	7,185,515		
ALB	5	3	68,953	1248	1272	7.46	31.24	516,838	2,159,717	2,676,555	418,545	1,210,125	224,787	432,335	113,083	0	5,075,430		
ALB	5	4	13,582	1183	1207	7.12	29.75	96,181	401,976	498,156	95,869	0	0	85,159	22,274	108,656	810,135		
			1,000,278			5.81								6,271,743			46,012,983	12,063,356	33,929,625
ALB	6	1	364,137	626	650	5.66	23.73	2,072,991	8,666,277	10,739,267	2,206,670	0	0	2,283,139	597,185	0	15,826,261		
ALB	6	2	205,583	624	648	5.67	23.70	1,169,354	4,868,382	6,057,736	1,245,833	0	0	1,289,005	337,156	0	8,929,731		
ALB	6	3	96,412	1283	1307	7.70	32.19	746,886	3,122,120	3,869,005	585,221	1,992,031	314,303	604,503	158,116	0	7,223,179		
ALB	6	4	25,906	1202	1226	7.20	30.10	187,536	783,756	971,292	162,896	0	0	162,431	42,466	207,248	1,566,353		
			692,038			5.68								4,339,078			33,545,524	8,269,854	25,275,670
ALB	7	1	545,236	929	953	6.06	25.42	3,378,511	14,124,455	17,502,967	3,304,130	0	0	3,418,630	894,187	0	25,119,914		
ALB	7	2	467,004	932	956	6.10	25.48	2,822,059	11,796,837	14,620,895	2,830,044	0	0	2,926,115	765,867	0	21,144,941		
ALB	7	3	86,561	1567	1591	9.40	39.31	814,020	3,404,072	4,218,092	525,425	1,519,146	282,189	542,737	141,960	0	7,229,549		
ALB	7	4	24,719	1478	1502	8.86	37.04	215,671	901,537	1,117,208	174,516	0	0	154,968	40,539	197,752	1,685,003		
			1,123,520			6.06								7,044,470			55,179,408	13,875,472	41,303,936
Alberta			9,130,883														432,434,642	111,015,785	321,418,857

Table B2 (Cont'd)

BC	1	1	13,129	684	708	5.12	21.40	67,890	284,553	352,543	79,562	0	0	62,319	21,532	0	535,955		
BC	1	2	1,831	701	725	5.16	21.66	9,485	39,696	49,181	11,096	0	0	11,480	3,003	0	74,760		
BC	1	3	1,004	1684	1708	10.11	42.27	10,854	45,396	56,251	6,094	17,820	3,273	6,295	1,647	0	91,180		
			15,964			5.12								100,094			701,895	181,830	520,065
BC	7	1	143,259	756	780	5.40	22.58	749,014	3,134,277	3,883,290	866,150	0	0	886,234	234,945	0	5,884,819		
BC	7	2	54,584	756	780	5.40	22.58	283,875	1,187,185	1,470,860	330,856	0	0	342,116	89,485	0	2,233,119		
BC	7	3	10,900	1766	1790	10.61	44.34	113,365	473,902	587,267	66,163	191,295	35,534	68,343	17,876	0	966,478		
BC	7	4	1,767	1626	1650	9.76	40.83	17,441	72,963	90,404	12,816	0	0	11,204	2,931	14,296	131,452		
			210,510			5.40								1,319,898			9,215,867	2,456,652	6,759,016
British Columbia			226,474														9,917,562	2,638,482	7,279,080
MAN	1	1	54,154	1539	1563	9.23	38.59	497,869	2,081,583	2,579,452	326,173	0	0	339,546	86,813	0	3,335,983		
MAN	1	2	2,151	1556	1580	9.33	39.02	22,057	92,206	114,264	13,035	0	0	13,487	3,526	0	144,313		
MAN	1	3	555,119	597	621	4.77	19.96	2,649,700	11,080,822	13,730,522	3,369,572	9,742,338	1,809,688	3,480,596	910,395	0	33,043,112		
MAN	1	4	0	1131	1155	6.86	28.76	0	0	0	0	0	0	0	0	0	0		
			611,424			9.23								3,833,628			36,523,408	9,477,072	27,046,336
MAN	2	1	64,712	1424	1448	8.53	35.85	551,679	2,306,254	2,857,933	392,155	0	0	405,744	106,128	0	3,761,960		
MAN	2	2	15,776	1429	1453	8.56	35.79	133,808	556,446	692,054	95,803	0	0	98,916	25,873	0	912,445		
MAN	2	3	609,886	562	586	4.84	19.39	2,835,312	11,863,162	14,698,474	3,700,794	10,899,989	1,987,576	3,822,731	999,885	0	35,909,450		
MAN	2	4	883	909	933	6.00	25.11	5,140	21,508	26,648	6,234	0	0	5,536	1,448	7,064	46,830		
			691,057			8.53								4,332,927			40,630,785	10,227,644	30,403,141
MAN	3	1	54,820	1515	1539	9.09	38.00	489,165	2,044,933	2,534,118	332,209	0	0	343,721	89,905	0	3,299,953		
MAN	3	2	25,080	1519	1543	9.11	38.09	210,986	881,885	1,092,871	151,864	0	0	157,126	41,098	0	1,442,959		
MAN	3	3	513,803	577	601	4.89	19.64	2,403,224	10,054,036	12,457,263	3,117,570	9,013,733	1,674,346	3,220,291	842,309	0	30,325,511		
MAN	3	4	7,023	917	941	6.03	25.23	42,465	177,649	220,134	49,562	0	0	44,034	11,518	56,184	381,452		
			600,506			9.09								3,765,173			35,449,875	9,223,772	26,226,103
MAN	4	1	17,765	1495	1519	8.96	37.49	152,811	638,295	790,908	107,856	0	0	111,387	29,135	0	1,039,083		
MAN	4	2	19,809	1501	1525	9.00	37.64	166,112	694,777	860,888	118,831	0	0	122,948	32,159	0	1,134,826		
MAN	4	3	151,708	639	663	4.94	20.65	748,014	3,126,174	3,874,187	920,868	2,662,475	494,568	951,209	248,801	0	9,152,109		
MAN	4	4	4,803	922	946	6.06	25.32	26,737	111,764	138,501	32,497	0	0	28,861	7,549	36,824	244,231		
			193,885			8.96								1,214,405			11,570,249	2,949,823	8,620,426
MAN	5	1	22,536	1371	1395	8.21	34.33	184,577	771,593	956,170	136,568	0	0	141,301	36,959	0	1,270,998		
MAN	5	2	45,790	1371	1395	8.21	34.33	375,137	1,568,185	1,943,321	277,487	0	0	287,103	75,096	0	2,583,007		
MAN	5	3	164,609	714	738	5.24	21.90	865,465	3,621,628	4,487,093	999,177	2,886,868	536,625	1,032,098	269,959	0	10,213,841		
MAN	5	4	16,102	674	698	5.06	21.22	82,106	343,115	425,222	113,880	0	0	100,960	26,407	126,816	795,084		
			249,037			8.21								1,561,462			14,862,930	3,606,056	11,256,875
MAN	6	1	47,405	1405	1429	8.42	35.18	396,909	1,656,711	2,055,619	287,274	0	0	297,229	77,744	0	2,717,867		
MAN	6	2	73,233	1405	1429	8.42	35.18	610,724	2,552,375	3,163,099	443,792	0	0	459,171	120,102	0	4,186,164		
MAN	6	3	217,640	599	623	4.78	20.00	1,047,164	4,378,470	5,425,635	1,321,075	3,819,582	709,506	1,364,603	356,930	0	12,997,330		
MAN	6	4	20,090	790	814	5.53	23.13	110,591	462,301	572,892	141,835	0	0	125,964	32,948	160,720	1,034,359		
			358,368			8.42								2,246,967			20,935,720	5,264,426	15,671,295

Table B2 (Cont'd)

MAN	7	1	69,367	1520	1544	9.12	39.12	636,732	2,862,257	3,298,989	420,364	0	0	434,931	113,762	0	4,266,046		
MAN	7	2	17,153	1509	1533	9.05	37.84	153,267	640,971	794,237	103,947	0	0	107,549	28,131	0	1,033,865		
MAN	7	3	632,386	470	494	4.27	17.87	2,708,520	11,315,337	14,021,858	3,838,583	11,096,374	2,061,578	3,965,060	1,037,113	0	36,022,567		
MAN	7	4	0	915	939	6.03	25.20	0	0	0	0	0	0	0	0	0	0		
			718,906			9.12								4,507,541			41,324,477	11,063,983	30,260,514
MAN	8	1	57,820	1579	1603	9.47	39.82	543,893	2,273,852	2,817,746	349,177	0	0	361,277	94,497	0	3,822,697		
MAN	8	2	4,449	1593	1617	9.56	39.96	43,809	183,229	227,036	26,981	0	0	27,895	7,296	0	289,190		
MAN	8	3	712,857	496	520	4.38	18.30	3,123,907	13,061,771	16,185,678	4,327,042	12,510,640	2,323,914	4,469,613	1,169,085	0	40,985,973		
MAN	8	4	0	1030	1054	6.48	27.10	0	0	0	0	0	0	0	0	0	0		
			774,826			9.47								4,856,786			44,897,860	12,197,335	32,700,525
MAN	9	1	26,096	1593	1617	9.56	39.96	245,306	1,025,621	1,270,926	156,136	0	0	163,816	42,798	0	1,635,475		
MAN	9	2	156	1585	1609	9.39	39.27	1,475	6,168	7,643	945	0	0	978	256	0	9,823		
MAN	9	3	227,589	414	438	4.05	16.94	921,885	3,855,578	4,777,243	1,381,465	3,994,187	741,940	1,426,983	373,246	0	12,895,064		
MAN	9	4	0	980	1004	6.29	26.27	0	0	0	0	0	0	0	0	0	0		
			253,840			9.56								1,591,577			14,340,361	4,016,287	10,322,074
MAN	10	1	480	1632	1656	9.80	40.99	4,799	20,035	24,825	2,969	0	0	3,072	804	0	31,670		
MAN	10	3	5,289	351	375	3.80	15.89	21,036	88,041	109,077	32,165	92,997	17,275	33,225	8,690	0	293,429		
			5,769			9.80								36,297			325,099	93,029	232,070
MAN	11	1	6,426	1584	1608	9.50	39.73	61,343	256,569	317,912	38,954	0	0	40,304	10,542	0	407,711		
MAN	11	2	1,726	1568	1592	9.41	39.33	16,306	68,164	84,472	10,460	0	0	10,822	2,831	0	108,584		
MAN	11	3	125,116	439	463	4.15	17.36	519,840	2,173,884	2,693,724	759,454	2,195,786	407,878	784,477	205,190	0	7,046,510		
MAN	11	4	57	984	1008	6.30	26.34	357	1,493	1,851	402	0	0	357	93	456	3,160		
			133,327			9.50								835,960			7,565,965	2,102,567	5,463,398
MAN	12	1	9,186	1644	1668	9.86	41.26	91,018	380,698	471,716	55,879	0	0	57,809	15,068	0	600,072		
MAN	12	2	602	1651	1675	9.91	41.45	5,966	24,953	30,919	3,648	0	0	3,775	987	0	39,329		
MAN	12	3	54,881	520	544	4.47	18.70	238,754	997,952	1,236,706	333,128	983,162	178,912	344,104	90,005	0	3,146,016		
			64,671			9.86								405,487			3,785,417	1,043,143	2,742,273
Manitoba			4,855,536														272,212,146	71,267,117	200,945,031
SASK	1a	1	117,830	1352	1376	8.09	33.85	945,127	3,952,260	4,897,366	714,050	0	0	738,794	193,241	0	6,543,473		
SASK	1a	2	36,875	1355	1379	8.12	33.93	297,196	1,242,701	1,539,896	222,251	0	0	229,952	60,147	0	2,052,247		
SASK	1a	3	705,239	669	693	5.08	21.14	3,546,913	14,824,044	18,370,957	4,280,801	12,376,944	2,299,079	4,421,849	1,156,592	0	42,906,222		
SASK	1a	4	1,552	959	983	6.20	25.93	9,731	40,662	50,393	10,957	0	0	9,731	2,545	124.16	86,043		
			861,296			8.09								5,400,326			51,587,985	12,368,211	39,219,774
SASK	1b	1	62,728	1345	1369	8.05	33.67	494,382	2,067,061	2,561,444	380,132	0	0	393,305	102,874	0	3,437,754		
SASK	1b	2	131,467	1345	1369	8.05	33.67	1,061,634	4,439,095	5,500,729	796,690	0	0	824,298	215,806	0	7,337,323		
SASK	1b	3	487,910	670	694	5.06	21.17	2,462,562	10,292,992	12,755,554	2,961,614	8,562,821	1,590,587	3,059,196	800,172	0	29,729,942		
SASK	1b	4	2,566	941	965	6.14	25.67	15,886	66,399	82,285	18,116	0	0	16,089	4,208	20,526	141,226		
			684,671			8.05								4,292,887			40,646,246	9,804,469	30,841,757

Table B2 (Cont'd)

SASK 2a	1	140,079	1285	1309	7.89	32.15	1,078,695	4,509,930	5,588,626	848,879	0	0	678,295	229,730	0	7,545,729			
SASK 2a	2	13,714	1301	1325	7.79	32.56	105,760	442,064	547,823	83,107	0	0	65,987	22,491	0	739,408			
SASK 2a	3	601,764	730	754	5.29	22.15	3,191,162	13,349,745	16,540,907	3,852,707	10,560,956	1,981,751	3,773,080	986,893	0	37,476,277			
SASK 2a	4	0	903	927	5.98	25.01	0	0	0	0	0	0	0	0	0	0			
		755,557			7.89								4,737,342			45,761,414	10,547,576	35,213,838	
SASK 2b	1	277,980	1242	1266	7.43	31.08	2,015,801	8,424,277	10,440,078	1,884,013	0	0	1,742,370	455,740	0	14,322,201			
SASK 2b	2	78,885	1266	1282	7.59	31.71	597,753	2,498,197	3,095,950	476,831	0	0	493,355	129,043	0	4,195,179			
SASK 2b	3	775,576	769	793	5.45	22.79	4,232,137	17,684,566	21,926,705	4,707,746	13,811,359	2,526,378	4,862,862	1,271,945	0	48,906,994			
SASK 2b	4	0	856	880	5.79	24.23	0	0	0	0	0	0	0	0	0	0			
		1,132,151			7.43								7,098,587			67,426,374	15,510,469	51,915,906	
SASK 3an	1	117,977	1204	1228	7.25	30.33	864,088	3,612,066	4,476,154	714,941	0	0	739,716	193,482	0	6,124,293			
SASK 3an	2	731	1311	1335	7.85	32.82	5,869	24,543	30,412	4,430	0	0	4,583	1,199	0	40,624			
SASK 3an	3	294,603	864	888	5.82	24.36	1,719,957	7,196,328	8,916,285	1,788,240	5,170,283	960,406	1,847,161	483,149	0	19,165,523			
SASK 3an	4	0	941	965	6.13	25.63	0	0	0	0	0	0	0	0	0	0			
		413,311			7.25								2,591,460			25,330,439	5,567,965	19,742,475	
SASK 3as	1	172,096	1269	1293	7.80	31.78	1,328,969	5,554,648	6,883,617	1,042,914	0	0	1,079,054	282,241	0	9,287,826			
SASK 3as	2	13,147	1378	1400	8.24	34.44	108,506	453,553	562,059	79,671	0	0	82,432	21,561	0	745,723			
SASK 3as	3	635,392	822	846	5.66	23.67	3,596,862	15,042,003	18,638,865	3,856,829	11,151,130	2,071,378	3,983,908	1,042,043	0	40,744,152			
SASK 3as	4	0	966	992	6.24	26.06	0	0	0	0	0	0	0	0	0	0			
		820,637			7.80								5,145,394			50,777,701	11,382,235	39,395,466	
SASK 3bn	1	266,540	1112	1136	6.81	28.46	1,805,312	7,548,774	9,354,085	1,615,232	0	0	1,671,206	437,126	0	13,077,649			
SASK 3bn	2	7,252	1161	1185	7.00	29.27	50,814	212,393	263,208	43,947	0	0	45,470	11,893	0	364,518			
SASK 3bn	3	476,868	958	982	6.20	25.91	2,962,945	12,388,524	15,351,469	2,905,515	8,400,623	1,560,458	3,001,248	785,016	0	32,004,328			
SASK 3bn	4	264	951	975	6.17	25.79	1,808	6,721	8,329	1,864	0	0	1,655	433	2,112	14,393			
		752,724			6.81								4,719,579			45,460,888	9,845,630	35,615,258	
SASK 3bs	1	108,448	1141	1165	6.93	28.90	743,761	3,109,519	3,853,280	657,195	0	0	679,969	177,855	0	5,368,209			
SASK 3bs	3	448,214	944	968	6.14	25.87	2,767,695	11,573,941	14,341,636	2,720,659	7,866,156	1,461,178	2,810,302	735,071	0	29,935,001			
		556,662			6.93								3,490,271			35,303,300	7,347,938	27,955,361	
SASK 4a	1	51,874	1061	1085	6.60	27.82	339,775	1,420,419	1,760,194	314,356	0	0	325,250	85,073	0	2,484,874			
SASK 4a	3	201,669	1003	1027	6.38	26.85	1,293,446	5,406,870	6,700,316	1,224,131	3,539,291	657,441	1,264,465	330,737	0	13,716,380			
		253,543			6.60								1,589,715			16,201,254	3,263,098	12,938,156	
SASK 4b	1	290,874	1012	1036	6.41	26.80	1,867,741	7,807,068	9,674,809	1,762,696	0	0	1,823,780	477,033	0	13,738,318			
SASK 4b	2	84	1001	1025	6.37	26.81	535	2,235	2,770	509	0	0	527	138	0	3,944			
SASK 4b	3	158,464	1004	1028	6.38	26.86	1,004,295	4,196,814	5,201,109	961,876	2,781,043	516,593	993,569	259,881	0	10,714,072			
		449,422			6.41								2,817,876			24,456,334	5,898,671	18,757,663	
SASK 5a	1	235,941	1322	1346	7.91	33.09	1,867,298	7,807,275	9,674,573	1,429,802	0	0	1,479,350	386,943	0	12,970,669			
SASK 5a	2	206,166	1274	1298	7.62	31.86	1,548,022	6,470,385	8,018,406	1,249,366	0	0	1,292,661	338,112	0	10,898,545			
SASK 5a	3	807,742	713	737	5.23	21.87	4,225,395	17,665,755	21,891,150	4,902,994	14,175,872	2,633,239	5,064,542	1,324,697	0	49,992,494			
SASK 5a	4	13,150	754	778	5.39	22.54	70,097	293,208	363,304	92,839	0	0	82,451	21,566	105,200	665,360			
		1,262,999			7.91								7,919,004			74,527,068	17,909,326	56,617,742	

Table B2 (Cont'd)

SASK 5b	1	290,866	1300	1324	7.79	32.57	2,295,229	9,595,500	11,890,730	1,763,375	0	0	1,824,482	477,217	0	15,955,804		
SASK 5b	2	203,872	1274	1298	7.82	31.87	1,529,317	6,393,249	7,922,566	1,234,252	0	0	1,277,023	334,022	0	10,767,863		
SASK 5b	3	822,851	755	779	5.39	22.56	4,444,677	18,587,373	23,032,051	4,894,706	14,441,035	2,662,494	5,159,276	1,349,476	0	51,859,037		
SASK 5b	4	82,776	713	737	5.23	21.88	432,796	1,810,026	2,242,822	584,399	0	0	519,006	135,753	662,208	4,144,187		
		1,400,265			7.79								8,779,787			82,526,892	19,868,007	62,838,864
SASK 6a	1	357,016	1205	1229	7.25	30.32	2,584,940	10,722,284	13,267,224	2,183,517	0	0	2,238,490	585,506	0	18,274,737		
SASK 6a	2	105,029	1153	1177	6.97	29.15	726,123	3,035,307	3,761,430	636,476	0	0	656,532	172,248	0	5,226,685		
SASK 6a	3	740,422	834	858	5.71	23.86	4,234,090	17,705,251	21,939,340	4,494,362	12,994,406	2,413,776	4,842,446	1,214,292	0	47,898,622		
SASK 6a	4	9,566	863	887	5.82	24.34	55,766	233,334	289,099	67,877	0	0	60,104	15,721	76,868	509,290		
		1,212,053			7.25								7,599,572			71,711,334	16,366,957	55,324,377
SASK 6b	1	368,556	1125	1149	6.87	28.71	2,541,421	10,625,745	13,167,166	2,233,461	0	0	2,310,859	604,435	0	18,315,921		
SASK 6b	2	99,866	1101	1125	6.78	28.27	669,823	2,800,493	3,470,116	605,794	0	0	626,787	163,944	0	4,866,641		
SASK 6b	3	439,162	822	846	6.05	25.31	2,652,408	11,091,379	13,743,787	2,865,713	7,707,293	1,431,668	2,753,546	720,226	0	29,022,233		
SASK 6b	4	19,463	850	874	5.77	24.13	110,751	462,985	573,737	137,550	0	0	122,158	31,952	155,864	1,021,261		
		927,189			6.87								5,813,350			53,226,056	12,183,001	41,043,055
SASK 7a	1	384,555	1100	1124	6.78	28.26	2,460,527	10,290,122	12,750,649	2,209,203	0	0	2,285,760	597,870	0	17,843,482		
SASK 7a	2	137,887	1099	1123	6.75	28.24	932,130	3,898,013	4,830,144	834,383	0	0	863,297	225,807	0	6,753,631		
SASK 7a	3	428,722	1020	1044	6.44	26.94	2,736,956	11,440,129	14,177,087	2,802,343	7,524,071	1,397,634	2,688,087	703,104	0	29,092,325		
SASK 7a	4	2,039	950	974	6.16	25.77	12,406	51,871	64,277	14,395	0	0	12,785	3,344	16,312	111,113		
		933,003			6.76								5,849,929			53,800,551	12,157,029	41,643,522
SASK 7b	1	337,436	1030	1054	6.48	27.09	2,170,629	9,071,867	11,242,496	2,044,862	0	0	2,115,724	553,395	0	15,956,477		
SASK 7b	2	160,433	1005	1029	6.36	26.66	1,018,778	4,248,320	5,265,099	972,224	0	0	1,005,915	263,110	0	7,506,348		
SASK 7b	3	261,599	1008	1030	6.39	26.70	1,679,759	7,020,308	8,700,066	1,567,906	4,591,062	852,813	1,640,226	429,022	0	17,801,096		
SASK 7b	4	6,579	927	951	6.06	25.40	39,849	166,824	206,473	46,448	0	0	41,250	10,790	52,832	357,593		
		766,047			6.48								4,803,115			41,621,513	9,767,099	31,854,413
SASK 8a	1	254,195	1290	1314	7.68	32.12	1,964,340	8,211,186	10,175,526	1,540,422	0	0	1,593,803	416,860	0	13,726,630		
SASK 8a	2	110,325	1246	1270	7.45	31.15	814,396	3,403,726	4,218,125	668,570	0	0	691,736	180,933	0	5,759,365		
SASK 8a	3	468,426	849	873	5.77	24.12	2,704,387	11,311,443	14,015,830	2,843,356	8,220,911	1,527,075	2,937,044	768,222	0	30,312,440		
SASK 8a	4	110,407	661	685	5.03	21.02	560,156	2,341,448	2,901,607	779,473	0	0	692,252	181,067	883,256	5,437,655		
		943,355			7.68								5,914,836			55,236,091	13,159,802	42,076,289
SASK 8b	1	207,021	1194	1218	7.19	30.07	1,459,337	6,099,857	7,558,994	1,254,547	0	0	1,298,022	339,514	0	10,451,078		
SASK 8b	2	171,256	1161	1185	7.00	29.26	1,199,077	5,011,619	6,210,696	1,037,811	0	0	1,073,775	280,860	0	8,603,142		
SASK 8b	3	379,930	877	901	5.87	24.57	2,233,511	9,341,823	11,575,333	2,306,175	6,867,772	1,236,572	2,382,161	623,085	0	24,793,096		
SASK 8b	4	66,535	744	768	5.35	22.38	352,110	1,473,060	1,825,170	469,737	0	0	417,174	109,117	532,280	3,353,479		
		824,742			7.19								5,171,132			47,200,797	11,101,027	36,099,769
SASK 9a	1	284,395	1160	1184	7.12	29.77	1,977,235	8,267,245	10,244,480	1,723,434	0	0	1,783,157	466,406	0	14,217,476		
SASK 9a	2	310,397	1085	1109	6.70	28.00	2,071,112	8,659,548	10,730,660	1,861,006	0	0	1,946,189	509,051	0	15,066,906		
SASK 9a	3	440,706	979	1003	6.26	26.25	2,759,180	11,532,609	14,291,990	2,875,085	7,734,390	1,436,702	2,763,227	722,758	0	29,824,151		
SASK 9a	4	95,191	837	861	5.72	23.91	539,230	2,254,607	2,793,836	672,048	0	0	595,548	156,113	761,526	4,980,374		
		1,130,689			7.12								7,089,420			63,888,910	15,139,926	48,748,984

Table B2 (Cont'd)

SASK 9b	1	443,110	1	1088	6.85	27.80	2,949,275	12,326,266	15,277,540	2,885,247	0	0	2,778,300	726,700	0	21,467,787		
SASK 9b	2	214,379	1011	1035	6.41	26.78	1,365,373	5,706,635	7,074,008	1,299,137	0	0	1,344,156	351,562	0	10,068,863		
SASK 9b	3	351,868	1040	1064	6.52	27.27	2,311,703	9,866,989	11,978,693	2,136,446	6,177,038	1,147,416	2,206,839	577,228	0	24,223,659		
SASK 9b	4	39,378	934	956	6.10	25.52	241,318	1,006,818	1,250,136	278,009	0	0	246,900	64,580	315,024	2,154,649		
		1,048,835			6.85								6,576,195			57,914,978	13,550,948	44,364,030
Saskatchewan		17,129,151														1,004,606,124	232,399,403	772,206,720
Total		31,142,044															417,320,787	1,301,849,688

PORTS:

1 = VANCOUVER
2 = PRINCE RUPERT
3 = THUNDER BAY
4 = CHURCHILL

Total Pooled Costs ($) =	1,301,849,688
Crow Benefit ($) =	720,000,000
Total Pooled (Net of Crow) ($) =	581,849,688
($/t) =	18.68

	Paid Direct By Farmers ($)	CWB Payment By Province ($)	Total Paid By Province (Direct + CWB) ($)	($/t)	Change From Existing Costs ($)
Alberta	111,015,765	170,598,996	281,614,761	30.84	(13,600,442)
British Colum.	2,838,482	4,231,380	6,869,862	30.33	(337,333)
Manitoba	71,267,117	86,982,800	158,249,917	33.99	13,872,022
Saskatchewan	232,399,403	320,036,513	552,435,916	32.25	65,753

Table B3 An Estimate of Saskatchewan's Total Grain Transportation Costs Under the Canadian Wheat Boards Price Pooling Proposal (with Churchill as a Pooling Point)

Prov.	Crop Dist.	Port of Exp.	Tonnage	Haul Distance Low (miles)	Haul Distance High (mi	Producer WGTA RATE $/t	GOVT WGTA RATE $/t	PRODUCER WGTA PAYMENT $)	GOVT PAYMENT $)	TOTAL WGTA PAYMENT $)	PORT TERMINAL CHARGES $)	LAKER CHARGES $)	TRANS-SHIPMENT CHARGES $)	PRIMARY ELEVATOR $)	MARKETING CHARGES $)	PORT DIFFER-ENTIALS BASIS=VANC. $)	TOTAL ACTUAL COST $)	TOTAL PAID DIRECT BY PRODUCER $)	TOTAL POOLED COSTS $)
ALB	1	1	750,013	976	1000	6.27	26.20	4,864,327	19,579,390	24,263,718	4,545,079	0	0	4,702,582	1,230,021	0	34,741,399		
ALB	1	2	110,482	1017	1041	6.43	26.87	707,709	2,957,565	3,665,274	669,521	0	0	692,722	181,190	0	5,208,708		
ALB	1	3	118,169	1088	1112	6.71	28.05	792,766	3,315,586	4,108,352	717,266	2,073,666	385,231	740,920	193,797	0	8,219,452		
			978,664			6.27								6,136,223			48,169,559	12,272,447	35,897,112
ALB	2	1	1,534,596	871	895	5.85	24.47	8,978,968	37,548,671	46,527,639	9,299,664	0	0	9,621,929	2,516,741	0	67,966,173		
ALB	2	2	126,141	889	913	5.92	24.76	755,125	3,157,305	3,912,430	776,534	0	0	803,444	210,151	0	5,702,560		
ALB	2	3	210,530	1209	1233	7.26	30.34	1,514,713	6,331,916	7,846,629	1,277,917	3,994,802	666,328	1,320,023	345,269	0	15,170,968		
			1,873,269			5.85								11,745,397			88,839,701	22,704,020	66,135,681
ALB	3	1	869,110	809	833	5.81	23.46	5,005,968	20,926,687	25,932,655	5,388,007	0	0	5,574,720	1,456,140	0	38,353,722		
ALB	3	2	20,293	787	811	5.52	23.09	112,679	470,952	583,630	122,976	0	0	127,237	33,261	0	867,123		
ALB	3	3	76,526	1236	1262	7.41	30.96	568,836	2,377,099	2,945,935	464,513	1,343,031	249,475	479,818	125,503	0	5,808,275		
			965,929			5.81								6,181,775			44,829,119	11,712,637	33,116,283
ALB	4	1	1,527,400	877	901	5.88	24.57	8,995,615	37,199,579	46,095,194	9,256,044	0	0	9,576,798	2,504,936	0	67,432,972		
ALB	4	2	678,011	852	876	5.78	24.17	3,916,963	16,379,554	20,296,517	4,108,747	0	0	4,251,129	1,111,938	0	29,768,330		
ALB	4	3	242,490	1151	1175	6.97	29.13	1,651,839	6,907,711	8,559,550	1,471,914	4,255,700	790,517	1,520,412	397,884	0	16,995,777		
ALB	4	4	29,284	1048	1072	6.55	27.40	190,855	797,760	988,615	206,745	0	0	183,611	48,026	234,272	1,661,269		
			2,477,185			5.86								15,531,950			115,858,348	30,097,798	85,760,550
ALB	5	1	751,954	860	884	5.81	24.29	4,330,063	18,107,043	22,437,106	4,556,841	0	0	4,714,752	1,233,205	0	32,941,903		
ALB	5	2	165,789	857	881	5.80	24.25	939,720	3,929,722	4,869,443	1,004,681	0	0	1,039,497	271,894	0	7,185,515		
ALB	5	3	68,953	1248	1272	7.46	31.24	516,838	2,159,717	2,676,555	418,545	1,210,125	224,787	432,335	113,083	0	5,075,430		
ALB	5	4	13,582	1183	1207	7.12	29.75	96,181	401,976	498,156	95,889	0	0	85,159	22,274	108,856	810,135		
			1,000,278			5.81								6,271,743			46,012,983	12,083,358	33,929,625
ALB	6	1	364,137	826	850	5.68	23.73	2,072,991	8,666,277	10,739,267	2,206,670	0	0	2,283,139	597,185	0	15,826,261		
ALB	6	2	205,563	824	848	5.67	23.70	1,169,354	4,888,382	6,057,736	1,245,833	0	0	1,289,005	337,156	0	8,929,731		
ALB	6	3	96,412	1283	1307	7.70	32.19	746,866	3,122,120	3,869,005	585,221	1,692,031	314,303	604,503	158,116	0	7,223,179		
ALB	6	4	25,906	1202	1226	7.20	30.10	187,536	783,756	971,292	182,896	0	0	162,431	42,486	207,248	1,566,353		
			692,038			5.88								4,339,078			33,545,524	8,269,854	25,275,670
ALB	7	1	545,236	929	953	6.06	25.42	3,378,511	14,124,455	17,502,967	3,304,130	0	0	3,418,630	894,187	0	25,119,914		
ALB	7	2	467,004	932	956	6.10	25.48	2,822,059	11,798,837	14,620,895	2,830,044	0	0	2,928,115	765,867	0	21,144,941		
ALB	7	3	86,561	1567	1591	9.40	39.31	814,020	3,404,072	4,218,092	525,425	1,519,146	282,189	542,737	141,960	0	7,229,549		
ALB	7	4	24,719	1478	1502	8.86	37.04	215,671	901,537	1,117,208	174,516	0	0	154,988	40,539	197,752	1,685,003		
			1,123,520			6.08								7,044,470			55,179,408	13,875,472	41,303,936
Alberta			9,130,883														432,434,642	111,015,785	321,416,857

Table 83 (Cont'd)

BC	1	1	13,129	684	708	5.12	21.40	67,990	284,553	352,543	79,582	0	0	62,319	21,532	0	535,955		
BC	1	2	1,831	701	725	5.18	21.66	9,485	39,696	49,181	11,098	0	0	11,460	3,003	0	74,760		
BC	1	3	1,004	1684	1706	10.11	42.27	10,854	45,398	56,251	6,094	17,620	3,273	6,295	1,647	0	91,180		
			15,964			5.12								100,094			701,895	181,830	920,065
BC	7	1	143,258	756	780	5.40	22.58	748,014	3,134,277	3,883,290	668,150	0	0	698,234	234,845	0	5,884,819		
BC	7	2	54,584	758	780	5.40	22.58	283,875	1,187,185	1,470,860	330,856	0	0	342,116	89,485	0	2,233,113		
BC	7	3	10,800	1786	1790	10.81	44.34	113,385	473,802	587,267	66,153	191,295	35,534	68,343	17,876	0	999,478		
BC	7	4	1,787	1626	1650	9.76	40.83	17,441	72,963	90,404	12,816	0	0	11,204	2,931	14,296	131,452		
			210,510			5.40								1,319,896			9,215,667	2,456,852	8,759,016
British Columbia			226,474														9,917,562	2,638,482	7,279,080
MAN	1	1	54,154	1539	1563	9.23	38.59	497,869	2,081,583	2,579,452	326,173	0	0	339,546	88,813	0	3,335,983		
MAN	1	2	2,151	1556	1580	9.33	39.02	22,057	92,206	114,264	13,035	0	0	13,487	3,526	0	144,313		
MAN	1	3	585,119	597	621	4.77	19.96	2,949,700	11,060,822	13,730,522	3,369,572	8,742,338	1,809,688	3,460,596	910,395	0	33,043,112		
MAN	1	4	0	1131	1155	6.88	28.76	0	0	0	0	0	0	0	0	0	0		
			811,424			9.23								3,833,628			36,523,408	9,477,072	27,046,336
MAN	2	1	64,712	1434	1446	8.53	35.65	551,879	2,308,254	2,857,933	392,155	0	0	405,744	108,128	0	3,761,980		
MAN	2	2	10,778	1429	1453	8.58	35.79	133,808	558,446	692,254	95,803	0	0	98,916	25,873	0	912,445		
MAN	2	3	609,866	562	586	4.84	19.39	2,835,312	11,863,162	14,698,474	3,700,794	10,899,989	1,987,576	3,822,731	999,865	0	35,909,450		
MAN	2	4	883	909	933	8.00	25.11	5,140	21,508	26,648	6,234	0	0	5,538	1,448	7,064	48,930		
			691,057			8.53								4,332,927			40,630,785	10,227,644	30,403,141
MAN	3	1	54,820	1515	1539	9.09	38.00	488,195	2,044,933	2,534,118	332,209	0	0	343,721	89,905	0	3,299,953		
MAN	3	2	25,060	1519	1543	9.11	38.09	210,886	881,885	1,092,871	151,864	0	0	157,128	41,098	0	1,442,959		
MAN	3	3	513,803	577	601	4.89	19.84	2,403,224	10,054,038	12,457,263	3,117,570	9,013,733	1,674,346	3,220,291	842,309	0	30,325,511		
MAN	3	4	7,023	917	941	8.03	25.23	42,465	177,649	220,134	49,562	0	0	44,034	11,516	56,184	381,452		
			600,506			9.09								3,765,173			35,449,875	9,223,772	28,226,103
MAN	4	1	17,788	1495	1519	8.96	37.49	152,811	638,295	790,906	107,856	0	0	111,397	29,135	0	1,039,083		
MAN	4	2	10,809	1501	1525	9.00	37.64	188,112	694,777	860,888	118,831	0	0	122,948	32,158	0	1,134,826		
MAN	4	3	151,708	639	663	4.94	20.65	748,014	3,128,174	3,874,187	920,868	2,862,475	494,568	951,209	248,801	0	9,152,109		
MAN	4	4	4,803	922	946	8.06	25.32	26,737	111,764	138,501	32,497	0	0	28,861	7,549	36,824	244,231		
			183,886			8.96								1,214,405			11,570,249	2,949,823	8,620,426
MAN	5	1	22,538	1371	1395	8.21	34.33	184,577	771,583	956,170	136,568	0	0	141,301	36,959	0	1,270,998		
MAN	5	2	45,790	1371	1395	8.21	34.33	375,137	1,568,185	1,943,321	277,467	0	0	287,103	75,096	0	2,583,007		
MAN	5	3	184,809	714	738	5.24	21.90	965,465	3,821,628	4,487,093	998,177	2,866,898	536,625	1,032,086	269,859	0	10,213,841		
MAN	5	4	16,102	674	698	5.09	21.22	82,108	343,115	425,222	113,680	0	0	100,960	26,407	126,816	795,084		
			249,037			5.09								1,561,452			14,862,930	2,826,570	12,038,360
MAN	6	1	47,405	1405	1429	8.42	35.18	398,909	1,656,711	2,055,619	287,274	0	0	297,229	77,744	0	2,717,867		
MAN	6	2	73,233	1405	1429	8.42	35.18	616,724	2,552,375	3,183,099	443,792	0	0	459,171	120,102	0	4,186,114		
MAN	6	3	217,840	599	623	4.78	20.00	1,047,184	4,378,470	5,425,635	1,321,075	3,819,582	709,506	1,364,603	356,930	0	12,997,330		
MAN	6	4	20,080	790	814	5.53	23.13	110,561	462,301	572,892	141,835	0	0	125,964	32,948	180,720	1,034,359		
			358,368			8.42								2,246,967			20,935,720	5,264,426	15,671,295

Table B3 (Cont'd)

MAN	7	1	69,387	1520	1544	9.12	38.12	636,732	2,662,257	3,298,989	420,384	0	0	434,931	113,782	0	4,268,048		
MAN	7	2	17,153	1509	1533	9.05	37.84	153,267	640,971	794,237	103,947	0	0	107,549	28,131	0	1,033,865		
MAN	7	3	632,398	470	494	4.27	17.87	2,706,520	11,315,337	14,021,858	3,838,583	11,098,374	2,061,578	3,965,000	1,037,113	0	36,022,567		
MAN	7	4	0	915	939	6.03	25.20	0	0	0	0	0	0	0	0	0	0		
			718,938			9.12								4,507,541			41,324,477	11,053,963	30,260,514
MAN	8	1	57,820	1579	1603	9.47	39.62	543,883	2,273,852	2,817,746	348,177	0	0	361,277	94,487	0	3,822,687		
MAN	8	2	4,449	1563	1617	9.36	39.96	43,809	183,229	227,038	28,981	0	0	27,895	7,298	0	269,190		
MAN	8	3	712,857	498	520	4.36	18.30	3,123,807	13,061,771	16,185,578	4,327,042	12,510,840	2,323,914	4,469,513	1,169,065	0	40,985,973		
MAN	8	4	0	1030	1054	6.46	27.10	0	0	0	0	0	0	0	0	0	0		
			774,926			9.47								4,858,786			44,897,850	-2,197,335	32,700,525
MAN	9	1	26,095	1583	1617	9.56	39.96	245,304	1,025,621	1,270,928	156,136	0	0	163,816	42,798	0	1,835,475		
MAN	9	2	156	1565	1589	9.39	39.27	1,475	6,168	7,643	945	0	0	978	256	0	9,823		
MAN	9	3	227,589	414	438	4.05	16.94	921,885	3,855,578	4,777,243	1,381,465	3,994,187	741,940	1,428,983	373,246	0	12,885,084		
MAN	9	4	0	980	1004	6.28	26.27	0	0	0	0	0	0	0	0	0	0		
			253,840			9.56								1,591,577			14,340,381	4,016,267	10,322,074
MAN	10	1	480	1632	1656	9.80	40.99	4,789	20,035	24,825	2,969	0	0	3,072	804	0	31,670		
MAN	10	3	5,299	351	375	3.80	15.89	21,036	88,041	109,077	32,165	62,997	17,275	33,225	8,690	0	293,429		
			5,789			9.80								36,297			325,099	93,039	232,070
MAN	11	1	8,429	1584	1608	9.50	39.73	81,343	258,569	317,912	38,854	0	0	40,304	10,542	0	407,711		
MAN	11	2	1,726	1568	1592	9.41	39.33	16,308	68,164	84,472	10,460	0	0	10,822	2,831	0	108,584		
MAN	11	3	125,118	439	463	4.15	17.36	519,840	2,173,864	2,693,724	759,454	2,195,786	407,878	784,477	205,190	0	7,046,510		
MAN	11	4	57	984	1008	6.30	26.34	357	1,493	1,851	462	0	0	357	93	456	3,180		
			133,327			9.50								835,960			7,565,985	2,102,567	5,463,398
MAN	12	1	9,168	1644	1668	9.86	41.28	91,018	380,896	471,718	55,679	0	0	57,809	15,068	0	600,072		
MAN	12	2	902	1651	1675	9.91	41.45	5,998	24,953	30,918	3,648	0	0	3,775	967	0	39,329		
MAN	12	3	54,881	520	544	4.47	18.70	238,754	997,952	1,236,706	333,128	963,162	178,912	344,104	89,005	0	3,146,016		
			64,871			9.86								405,687			3,785,417	1,043,143	2,742,273
Manitoba			4,855,536														272,212,148	70,487,631	201,724,517
SASK 1a		1	117,830	1352	1376	9.09	33.85	945,127	3,952,280	4,897,388	714,050	0	0	738,794	193,241	0	6,543,473		
SASK 1a		2	39,675	1355	1379	9.12	33.93	297,198	1,242,701	1,539,899	222,251	0	0	229,952	60,147	0	2,052,247		
SASK 1a		3	705,239	989	993	5.06	21.14	3,546,913	14,824,044	18,370,957	4,280,801	12,376,944	2,299,079	4,421,849	1,156,592	0	42,906,222		
SASK 1a		4	1,552	959	983	6.20	25.93	9,731	40,662	50,393	10,957	0	0	9,731	2,545	124.19	86,043		
			864,296			9.09								5,400,326			51,587,985	12,368,211	39,219,774
SASK 1b		1	62,738	1348	1369	9.08	33.67	497,792	2,067,061	2,581,444	380,132	0	0	393,305	102,874	0	3,437,754		
SASK 1b		2	131,467	1345	1369	8.05	33.67	1,061,634	4,439,065	5,500,729	796,880	0	0	824,298	215,606	0	7,337,323		
SASK 1b		3	467,910	670	694	5.08	21.17	2,462,562	10,292,992	12,755,554	2,961,614	8,562,821	1,590,587	3,059,196	800,172	0	29,729,942		
SASK 1b		4	2,586	941	965	6.14	25.67	15,896	66,390	82,286	19,116	0	0	16,089	4,208	20,528	141,226		
			664,671			8.05								4,292,987			40,646,246	9,804,489	30,841,757

Table 60 (Cont'd)

SASK 2a	1	140,070	1285	1309	7.88	32.15	1,078,695	4,508,830	5,588,626	648,879	0	0	878,295	229,730	0	7,545,729			
SASK 2a	2	13,714	1301	1325	7.79	32.98	105,760	442,064	547,823	63,167	0	0	85,967	22,491	0	739,408			
SASK 2a	3	601,794	730	754	5.29	22.15	3,181,162	13,349,745	16,540,907	3,852,707	10,580,956	1,961,751	3,773,080	986,893	0	37,476,277			
SASK 2a	4	0	900	927	5.98	25.01	0	0	0	0	0	0	0	0	0	0			
		755,557			7.89								4,737,342			45,761,414	10,547,576	35,213,838	
SASK 2b	1	277,880	1242	1266	7.43	31.06	2,015,801	8,424,277	10,440,078	1,894,013	0	0	1,742,370	455,740	0	14,322,201			
SASK 2b	2	78,885	1266	1292	7.59	31.71	587,753	2,456,197	3,095,950	476,831	0	0	493,355	129,043	0	4,195,179			
SASK 2b	3	775,576	769	793	5.45	22.79	4,232,137	17,694,566	21,926,705	4,707,748	13,811,359	2,526,378	4,862,862	1,271,945	0	48,906,994			
SASK 2b	4	0	696	690	5.79	24.23	0	0	0	0	0	0	0	0	0	0			
		1,132,191			7.43								7,096,587			67,426,374	15,510,489	51,915,906	
SASK 2an	1	117,877	1264	1288	7.25	30.33	884,088	3,812,066	4,476,154	714,841	0	0	736,716	193,482	0	8,124,293			
SASK 2an	2	731	1311	1339	7.65	32.62	5,869	24,543	30,412	4,430	0	0	4,563	1,199	0	40,824			
SASK 2an	3	294,803	694	668	5.82	24.36	1,710,857	7,186,328	8,916,285	1,788,240	5,170,283	980,406	1,847,161	483,149	0	19,185,523			
SASK 2an	4	0	941	965	6.13	25.63	0	0	0	0	0	0	0	0	0	0			
		413,311			7.25								2,591,469			25,230,439	5,887,965	19,742,475	
SASK 2aa	1	172,098	1269	1293	7.60	31.78	1,320,980	5,554,848	6,883,017	1,042,914	0	0	1,079,054	282,241	0	9,287,826			
SASK 2aa	2	13,147	1376	1400	8.24	34.44	108,509	453,553	562,059	79,671	0	0	82,432	21,561	0	745,723			
SASK 2aa	3	635,382	622	646	5.66	23.67	3,596,662	15,042,003	18,638,665	3,856,529	11,151,130	2,071,378	3,983,908	1,042,043	0	40,744,152			
SASK 2aa	4	0	969	992	6.24	26.09	0	0	0	0	0	0	0	0	0	0			
		820,627			7.60								5,145,394			50,777,701	11,382,235	39,395,466	
SASK 3bn	1	288,540	1112	1138	6.81	28.46	1,805,312	7,548,774	9,354,086	1,815,232	0	0	1,871,206	437,126	0	13,077,849			
SASK 3bn	2	7,252	1161	1185	7.08	29.27	50,614	212,293	262,908	43,947	0	0	45,470	11,863	0	364,518			
SASK 3bn	3	478,668	956	982	6.20	25.91	2,982,945	12,388,524	15,351,469	2,905,515	8,400,623	1,560,458	3,001,748	785,018	0	32,004,328			
SASK 3bn	4	594	951	975	6.17	25.79	1,809	6,721	8,339	1,894	0	0	1,855	433	2,112	14,383			
		752,724			6.81								4,719,579			45,460,568	9,845,630	35,615,258	
SASK 3bs	1	108,448	1161	1185	6.93	28.98	743,761	3,109,519	3,853,280	657,195	0	0	679,969	177,858	0	5,388,299			
SASK 3bs	3	448,214	944	968	6.14	25.67	2,767,695	11,573,941	14,341,636	2,720,559	7,866,156	1,461,178	2,810,302	735,571	0	29,835,001			
		556,662			6.93								3,490,271			35,203,300	7,347,938	27,855,361	
SASK 4a	1	51,874	1581	1580	6.90	27.62	338,775	1,420,419	1,780,194	314,298	0	0	325,250	85,073	0	2,484,874			
SASK 4a	3	201,669	1303	1327	6.39	26.65	1,293,448	5,406,870	6,700,318	1,224,131	3,539,291	657,441	1,264,465	330,737	0	13,716,380			
		253,543			6.60								1,589,715			16,201,254	3,263,099	12,938,156	
SASK 4b	1	260,874	1012	1036	6.41	26.80	1,867,741	7,807,068	9,674,809	1,702,696	0	0	1,823,789	477,033	0	13,736,318			
SASK 4b	2	84	1001	1025	6.37	26.61	535	2,235	2,770	509	0	0	527	138	0	3,944			
SASK 4b	3	156,464	1004	1028	6.38	26.66	1,004,295	4,195,814	5,201,109	981,876	2,781,043	516,593	993,569	259,881	0	10,714,072			
		449,422			6.41								2,817,870			24,454,334	5,698,671	18,757,663	
SASK 5a	1	235,941	1332	1340	7.01	33.09	1,867,298	7,807,275	9,674,573	1,439,802	0	0	1,470,350	388,943	0	12,970,969			
SASK 5a	2	266,168	1274	1298	7.62	31.86	1,548,022	6,470,385	8,018,406	1,349,388	0	0	1,292,681	338,112	0	10,998,545			
SASK 5a	3	807,742	713	737	5.23	21.87	4,225,395	17,665,755	21,891,150	4,902,594	14,175,872	2,533,239	5,064,542	1,324,697	0	49,892,494			
SASK 5a	4	13,150	754	778	5.39	22.54	70,887	293,298	363,384	92,839	0	0	82,451	21,565	105,200	665,360			
		1,282,980			7.01								7,910,004			74,527,369	17,809,326	56,617,743	

Table B3 (Cont'd)

SASK 5b	1	290,866	1300	1324	7.79	32.57	2,266,229	9,595,500	11,860,730	1,763,375	0	0	1,624,462	477,217	0	15,855,804			
SASK 5b	2	203,872	1274	1298	7.82	31.87	1,529,317	6,393,248	7,922,566	1,234,252	0	0	1,277,023	334,002	0	10,767,883			
SASK 5b	3	822,851	755	779	5.39	22.58	4,444,577	18,567,373	23,032,051	4,894,706	18,441,035	2,882,494	5,159,279	1,348,479	0	51,858,037			
SASK 5b	4	82,776	713	737	5.23	21.86	432,796	1,810,026	2,242,822	584,399	0	0	519,006	135,753	662,269	4,144,187			
		1,400,285			7.79								8,779,787			82,526,892	19,888,307	62,638,984	
SASK 6a	1	257,019	1208	1229	7.85	30.22	2,284,840	10,722,264	13,267,254	2,163,517	0	0	2,238,480	585,508	0	18,274,737			
SASK 6a	2	105,229	1153	1177	6.87	28.15	726,123	3,035,307	3,761,430	636,479	0	0	656,532	172,248	0	5,326,885			
SASK 6a	3	740,422	834	858	5.71	23.86	4,234,090	17,705,251	21,939,340	4,494,382	12,994,408	2,413,779	4,842,448	1,214,292	0	47,898,622			
SASK 6a	4	9,596	863	887	5.80	24.34	55,768	233,334	289,289	67,877	0	0	60,104	15,721	70,899	509,290			
		1,212,053			7.25								7,399,572			71,711,334	18,388,867	55,324,377	
SASK 6b	1	388,598	1125	1148	6.87	28.71	2,541,421	10,625,746	13,167,166	2,233,481	0	0	2,310,859	604,435	0	18,315,881			
SASK 6b	2	99,998	1101	1125	6.76	28.27	669,823	2,800,493	3,470,116	605,794	0	0	626,767	163,944	0	4,866,941			
SASK 6b	3	439,160	929	948	6.08	25.51	2,663,408	11,091,379	13,754,787	2,666,713	7,707,393	1,431,668	9,753,548	730,206	0	39,025,233			
SASK 6b	4	19,483	850	874	5.77	24.13	110,751	462,965	573,737	137,550	0	0	122,158	31,952	155,864	1,021,261			
		927,199			6.87								5,813,350			53,226,056	12,163,001	41,043,055	
SASK 7a	1	384,555	1100	1124	6.76	28.26	2,460,527	10,290,122	12,750,649	2,209,203	0	0	2,285,760	597,870	0	17,843,482			
SASK 7a	2	137,887	1099	1123	6.75	28.24	932,130	3,898,013	4,830,144	834,383	0	0	863,297	225,807	0	6,753,631			
SASK 7a	3	428,722	1020	1044	6.44	26.94	2,736,958	11,440,129	14,177,087	2,802,343	7,524,071	1,397,634	2,686,087	703,104	0	29,092,325			
SASK 7a	4	2,039	950	974	6.16	25.77	12,406	51,871	64,277	14,395	0	0	12,785	3,344	16,312	111,113			
		933,003			6.76								5,849,929			53,800,551	12,157,029	41,643,522	
SASK 7b	1	337,436	1030	1054	6.48	27.06	2,170,629	9,071,867	11,242,496	2,044,662	0	0	2,115,724	553,395	0	15,956,477			
SASK 7b	2	160,433	1005	1029	6.36	26.66	1,018,778	4,248,320	5,265,098	972,224	0	0	1,005,915	263,110	0	7,506,348			
SASK 7b	3	261,599	1008	1030	6.39	26.70	1,679,759	7,020,306	8,700,066	1,587,906	4,591,062	852,813	1,640,226	429,022	0	17,801,096			
SASK 7b	4	6,579	927	951	6.06	25.40	39,849	166,624	206,473	46,448	0	0	41,250	10,790	52,632	357,593			
		766,047			6.48								4,803,115			41,621,513	9,767,099	31,854,413	
SASK 8a	1	254,196	1290	1314	7.88	32.12	1,964,340	8,211,186	10,175,526	1,540,422	0	0	1,593,803	416,860	0	13,726,630			
SASK 8a	2	110,325	1248	1270	7.45	31.15	814,396	3,403,726	4,218,125	668,570	0	0	691,738	180,933	0	5,759,365			
SASK 8a	3	468,428	849	873	5.77	24.12	2,704,367	11,311,443	14,015,830	2,843,358	8,220,911	1,527,075	2,937,044	768,222	0	30,312,440			
SASK 8a	4	110,407	661	685	5.03	21.02	560,158	2,341,448	2,901,607	779,473	0	0	692,252	181,067	883,256	5,437,655			
		943,355			5.03								5,914,836			55,236,091	10,659,912	44,576,180	
SASK 8b	1	207,021	1194	1218	7.18	30.07	1,459,337	6,099,657	7,558,994	1,254,547	0	0	1,298,022	339,514	0	10,451,078			
SASK 8b	2	171,256	1161	1185	7.00	29.26	1,199,077	5,011,619	6,210,696	1,037,811	0	0	1,073,775	280,860	0	8,803,142			
SASK 8b	3	379,930	877	901	5.87	24.57	2,233,511	9,341,823	11,575,333	2,306,175	6,867,772	1,238,572	2,382,161	623,085	0	24,793,098			
SASK 8b	4	66,535	744	768	5.35	22.38	352,110	1,473,060	1,825,170	469,737	0	0	417,174	109,117	532,280	3,353,479			
		824,742			7.19								5,171,132			47,200,797	11,101,027	36,099,769	
SASK 9a	1	284,395	1160	1184	7.12	29.77	1,977,235	8,267,245	10,244,480	1,723,434	0	0	1,783,157	466,408	0	14,217,478			
SASK 9a	2	310,397	1085	1109	6.70	28.00	2,071,112	8,659,546	10,730,660	1,861,006	0	0	1,946,189	509,051	0	15,066,906			
SASK 9a	3	440,706	979	1003	6.26	26.25	2,759,180	11,532,809	14,291,990	2,675,085	7,734,390	1,436,702	2,763,227	722,758	0	29,624,151			
SASK 9a	4	95,191	837	861	5.72	23.91	539,230	2,254,607	2,793,836	672,048	0	0	596,848	156,113	761,526	4,980,374			
		1,130,689			7.12								7,089,420			63,838,910	15,139,926	48,748,984	

Table B3 (Cont'd)

SASK 9b	1	443,110	1	1068	6.85	27.80	2,949,275	12,328,266	15,277,540	2,885,247	0	0	2,778,300	726,700	0	21,467,787		
SASK 9b	2	214,379	1011	1035	6.41	26.78	1,365,373	5,708,635	7,074,008	1,299,137	0	0	1,344,156	351,582	0	10,068,883		
SASK 9b	3	351,998	1040	1064	6.52	27.27	2,311,703	9,666,989	11,978,693	2,136,446	6,177,038	1,147,416	2,206,839	577,228	0	24,223,659		
SASK 9b	4	39,378	834	858	6.10	25.52	241,318	1,008,818	1,250,136	278,009	0	0	246,900	64,580	315,024	2,154,649		
		1,048,835			6.85								6,576,195			57,914,978	13,550,948	44,364,030
Saskatchewan		17,129,151														1,004,606,124	229,899,513	774,706,611
Total		31,142,044															414,041,411	1,305,129,065

PORTS:

1 = VANCOUVER
2 = PRINCE RUPERT
3 = THUNDER BAY
4 = CHURCHILL

Total Pooled Costs ($) =	1,305,129,065
Crow Benefit ($) =	720,000,000
Total Pooled (Net of Crow) ($) =	585,129,065
($/t) =	18.79

	Paid Direct By Farmers ($)	CWB Payment By Province ($)	Total Paid By Province (Direct + CWB) ($)	($/t)	Change From Existing Costs ($)
Alberta	111,015,785	171,560,513	282,576,298	30.85	(12,636,825)
British Colum.	2,636,482	4,255,229	6,893,710	30.44	(313,485)
Manitoba	70,487,631	87,473,045	157,960,677	33.93	13,562,782
Saskatchewan	229,899,513	321,840,278	551,739,791	32.21	(630,372)

Table B4 An Estimate of Saskatchewan's Total Grain Transportation Costs Under the NGB Price Pooling Proposal

Prov. Dist.	Crop Dist.	Port of Exp.	Tonnage	Haul Distance Low (miles)	Haul Distance High (mi)	Producer WGTA RATE $/t	GOVT WGTA RATE $/t	PRODUCER WGTA PAYMENT $	GOVT PAYMENT $	TOTAL WGTA PAYMENT $	PORT TERMINAL CHARGES $	LAKER CHARGES $	TRANS-SHIPMENT CHARGES $	PRIMARY ELEVATOR $	MARKETING CHARGES $	PORT DIFFER-ENTIALS BASIS=VANC. $	TOTAL ACTUAL COST $	TOTAL PAID DIRECT BY PRODUCER $	TOTAL POOLED COSTS $
ALB	1	1	750,013	976	1000	6.27	26.20	4,894,327	19,579,390	24,263,718	4,545,079	0	0	4,702,562	1,230,021	0	34,741,380		
ALB	1	2	110,462	1017	1041	6.43	26.87	707,709	2,957,565	3,665,274	669,521	0	0	692,722	181,190	0	5,208,708		
ALB	1	3	118,189	1086	1112	6.71	28.05	792,766	3,315,586	4,108,352	717,266	2,073,886	365,231	740,920	193,797	0	8,219,452		
			978,664			6.27					8			6,136,223			48,169,559	18,203,150	29,966,408
ALB	2	1	1,534,596	871	895	5.85	24.47	8,978,968	37,548,871	46,527,839	9,299,664	0	0	9,821,929	2,518,741	0	67,968,173		
ALB	2	2	126,141	889	913	5.92	24.78	755,125	3,157,305	3,912,430	778,534	0	0	803,444	210,151	0	5,702,560		
ALB	2	3	210,530	1209	1233	7.26	30.34	1,514,713	6,331,916	7,846,629	1,277,917	3,894,802	686,326	1,320,023	345,269	0	15,170,966		
			1,873,269			5.85					8			11,745,397			88,839,701	34,056,030	54,783,671
ALB	3	1	980,110	809	833	5.81	23.46	5,005,988	20,926,867	25,932,855	5,366,007	0	0	5,574,720	1,456,140	0	38,353,722		
ALB	3	2	20,293	787	811	5.52	23.09	112,879	470,952	583,830	122,978	0	0	127,237	33,281	0	867,123		
ALB	3	3	76,526	1239	1262	7.41	30.98	568,836	2,377,099	2,945,935	464,513	1,343,031	249,475	479,818	125,503	0	5,808,275		
			995,929			5.81					8			6,181,775			44,829,119	17,887,566	27,141,553
ALB	4	1	1,527,400	877	901	5.86	24.57	8,995,615	37,199,579	46,095,194	9,256,044	0	0	9,576,798	2,504,936	0	67,432,972		
ALB	4	2	878,011	852	876	5.76	24.17	3,918,963	16,379,554	20,298,517	4,108,747	0	0	4,251,129	1,111,936	0	29,768,330		
ALB	4	3	242,490	1151	1175	6.97	29.13	1,851,839	6,907,711	8,559,550	1,471,914	4,255,700	790,517	1,520,412	397,684	0	16,995,777		
ALB	4	4	29,284	1046	1072	6.55	27.40	190,855	797,760	988,615	206,745	0	0	183,611	48,026	234,272	1,661,269		
			2,477,185			5.86					8			15,531,050			115,858,348	45,109,539	70,748,809
ALB	5	1	751,854	980	884	5.81	24.29	4,330,063	18,107,043	22,437,106	4,556,841	0	0	4,714,752	1,233,205	0	32,941,903		
ALB	5	2	165,789	957	881	5.80	24.25	939,720	3,929,722	4,869,443	1,004,681	0	0	1,039,497	271,894	0	7,185,515		
ALB	5	3	68,953	1248	1272	7.48	31.24	516,838	2,159,717	2,676,555	416,545	1,210,125	224,787	432,335	113,083	0	5,075,430		
ALB	5	4	13,582	1183	1207	7.12	29.75	96,181	401,976	498,156	95,889	0	0	85,159	22,274	108,856	810,135		
			1,000,278			5.81					8			6,271,743			46,012,983	18,145,043	27,867,940
ALB	6	1	384,137	828	850	5.88	23.73	2,072,991	8,666,277	10,739,267	2,206,670	0	0	2,283,139	597,185	0	15,826,261		
ALB	6	2	205,583	824	848	5.87	23.70	1,169,354	4,868,382	6,057,736	1,245,833	0	0	1,289,005	337,156	0	8,929,731		
ALB	6	3	98,412	1283	1307	7.70	32.19	746,866	3,122,120	3,869,005	585,221	1,892,031	314,303	604,503	158,116	0	7,223,179		
ALB	6	4	25,906	1202	1226	7.20	30.10	187,536	783,756	971,292	182,896	0	0	162,431	42,486	207,248	1,566,353		
			692,038			5.88					8			4,339,078			33,545,524	12,463,604	21,081,920
ALB	7	1	545,238	929	953	6.08	25.42	3,378,511	14,124,455	17,502,967	3,304,130	0	0	3,418,630	894,167	0	25,119,914		
ALB	7	2	467,004	932	956	6.10	25.48	2,822,059	11,798,637	14,620,695	2,830,044	0	0	2,928,115	765,887	0	21,144,941		
ALB	7	3	86,561	1567	1591	9.40	39.31	814,020	3,404,072	4,218,092	525,425	1,519,146	282,189	542,737	141,960	0	7,229,549		
ALB	7	4	24,719	1478	1502	8.98	37.04	215,871	901,537	1,117,208	174,518	0	0	154,988	40,539	197,752	1,685,003		
			1,123,520			6.08					8			7,044,470			55,179,408	20,884,003	34,495,404
Alberta			9,130,883														432,434,842	186,348,936	266,085,706

Table B4 (Cont'd)

BC	1	1	13,139	684	708	5.12	21.40	67,990	264,553	352,543	79,562	0	0	62,319	21,532	0	535,955		
BC	1	2	1,831	701	725	5.18	21.88	9,465	36,696	49,181	11,096	0	0	11,480	3,003	0	74,760		
BC	1	3	1,004	1684	1708	10.11	42.27	10,854	45,396	56,251	6,094	17,820	3,273	6,295	1,847	0	91,180		
			15,984			5.12					6			100,094			701,895	278,572	423,323
BC	7	1	143,259	756	780	5.40	22.58	749,014	3,134,277	3,883,290	868,150	0	0	896,234	234,945	0	5,884,619		
BC	7	2	54,564	756	780	5.40	22.58	283,875	1,187,185	1,470,960	330,656	0	0	342,116	89,485	0	2,233,110		
BC	7	3	10,800	1766	1790	10.61	44.34	113,265	473,802	587,267	66,163	161,295	35,534	68,343	17,876	0	966,478		
BC	7	4	1,787	1626	1650	9.76	40.83	17,441	72,993	90,434	12,616	0	0	11,204	2,931	14,296	131,452		
			210,510			5.40					6			1,319,896			9,215,667	3,732,342	5,483,325
British Columbia			226,474														9,917,562	4,010,914	5,906,648
MAN	1	1	54,154	1539	1563	9.23	38.59	487,869	2,081,563	2,579,452	328,173	0	0	339,546	88,813	0	3,335,983		
MAN	1	2	2,151	1556	1580	9.33	39.02	22,057	92,206	114,264	13,035	0	0	13,467	3,528	0	144,313		
MAN	1	3	566,119	597	621	4.77	19.96	2,849,700	11,080,822	13,730,522	3,369,572	9,742,336	1,809,688	3,480,596	910,395	0	33,043,112		
MAN	1	4	0	1131	1155	6.80	28.76	0	0	0	0	0	0	0	0	0	0		
			611,424			4.77	6.47				6			3,833,626			36,523,408	11,500,885	25,022,523
MAN	2	1	64,712	1424	1448	8.53	35.65	551,879	2,308,254	2,857,933	392,155	0	0	405,744	106,128	0	3,781,990		
MAN	2	2	15,776	1439	1463	8.58	35.79	133,608	558,446	692,054	95,803	0	0	98,916	25,873	0	912,445		
MAN	2	3	609,888	582	586	4.84	19.39	2,835,312	11,863,162	14,698,474	3,700,794	10,899,989	1,987,576	3,822,731	999,885	0	35,909,450		
MAN	2	4	883	909	933	6.00	25.11	5,140	21,508	26,648	6,234	0	0	5,536	1,448	7,064	48,930		
			691,257			4.84	6.34				6			4,332,927			40,630,795	12,908,845	27,721,840
MAN	3	1	54,820	1515	1539	9.09	38.00	488,165	2,044,033	2,534,118	332,209	0	0	343,721	89,805	0	3,299,953		
MAN	3	2	25,090	1519	1543	9.11	38.09	210,988	881,885	1,092,871	151,884	0	0	157,126	41,066	0	1,442,959		
MAN	3	3	513,803	577	601	4.89	19.84	2,403,224	10,054,038	12,457,263	3,117,570	9,013,733	1,674,346	3,220,291	842,309	0	30,325,511		
MAN	3	4	7,023	917	941	8.03	29.23	42,465	177,649	220,134	49,562	0	0	44,034	11,518	56,164	381,452		
			600,506			4.89	6.39				6			3,765,173			35,449,875	11,247,477	24,202,398
MAN	4	1	17,785	1495	1519	8.98	37.49	152,811	638,295	790,808	107,658	0	0	111,287	29,135	0	1,039,083		
MAN	4	2	18,909	1501	1525	9.00	37.64	186,112	694,777	880,888	119,831	0	0	122,948	32,159	0	1,134,826		
MAN	4	3	151,708	639	663	4.84	20.65	748,014	3,126,174	3,874,187	920,868	2,862,475	494,568	951,209	248,801	0	9,152,109		
MAN	4	4	4,803	922	946	6.08	29.32	26,737	111,784	138,501	32,497	0	0	28,861	7,549	36,824	244,231		
			193,885			4.84	6.64				6			1,214,405			11,570,249	3,878,141	7,894,107
MAN	5	1	22,936	1371	1395	8.21	34.33	184,877	771,563	958,178	136,566	0	0	141,301	36,959	0	1,270,998		
MAN	5	2	45,780	1371	1395	8.21	34.33	375,137	1,566,185	1,943,321	277,467	0	0	287,103	75,096	0	2,583,007		
MAN	5	3	184,809	714	738	5.24	21.80	865,465	3,821,628	4,687,093	999,177	2,888,888	536,825	1,032,098	269,959	0	10,213,841		
MAN	5	4	18,102	674	698	5.09	21.22	82,108	343,115	425,222	113,980	0	0	100,960	26,407	126,816	795,064		
			249,037			5.24	6.94				6			1,561,462			14,862,930	4,801,433	10,061,497
MAN	6	1	47,405	1405	1429	8.42	35.18	396,909	1,656,711	2,055,619	287,274	0	0	297,229	77,744	0	2,717,867		
MAN	6	2	73,233	1405	1429	8.42	35.18	610,724	2,552,375	3,163,099	443,792	0	0	458,171	120,102	0	4,186,164		
MAN	6	3	217,840	586	623	4.78	20.00	1,047,164	4,376,470	5,425,635	1,321,075	3,819,562	709,506	1,364,603	356,930	0	12,997,330		
MAN	6	4	20,090	790	814	5.53	23.13	110,591	462,301	572,892	141,835	0	0	125,964	32,948	160,720	1,034,359		
			356,368			4.78	6.48				6			2,246,967			20,935,720	6,744,486	14,191,235

Table B4 (Cont'd)

MAN	7	1	69,367	1520	1544	9.12	36.12	636,732	2,662,257	3,298,989	420,364	0	0	434,931	113,762	0	4,268,046		
MAN	7	2	17,153	1509	1533	9.05	37.84	153,267	640,971	794,237	103,947	0	0	107,549	28,131	0	1,033,865		
MAN	7	3	632,366	470	494	4.27	17.87	2,706,520	11,315,337	14,021,858	3,836,583	11,098,374	2,061,578	3,965,060	1,037,113	0	36,022,567		
MAN	7	4	0	915	939	6.03	25.20	0	0	0	0	0	0	0	0	0	0		
			718,906			4.27	5.97				6			4,507,541			41,324,477	13,163,169	26,161,309
MAN	8	1	57,820	1579	1603	9.47	39.82	543,893	2,273,852	2,817,746	349,177	0	0	361,277	94,497	0	3,822,697		
MAN	8	2	4,449	1593	1617	9.58	39.96	43,809	183,229	227,038	28,981	0	0	27,895	7,296	0	289,190		
MAN	8	3	712,857	496	520	4.36	18.30	3,123,907	13,061,771	16,185,678	4,327,042	12,510,640	2,323,914	4,469,613	1,169,085	0	40,985,973		
MAN	8	4	0	1030	1054	6.48	27.10	0	0	0	0	0	0	0	0	0	0		
			774,926			4.36	6.08				6			4,856,786			44,897,860	14,274,137	30,623,723
MAN	9	1	26,095	1593	1617	9.58	39.96	245,306	1,025,621	1,270,926	158,136	0	0	163,816	42,796	0	1,835,475		
MAN	9	2	156	1585	1589	9.39	39.27	1,475	6,168	7,643	945	0	0	978	256	0	9,823		
MAN	9	3	227,569	414	438	4.05	16.94	821,665	3,855,578	4,777,243	1,361,465	3,994,187	741,940	1,426,983	373,246	0	12,895,084		
MAN	9	4	0	980	1004	6.29	26.27	0	0	0	0	0	0	0	0	0	0		
			253,840			4.05	5.75				6			1,591,577			14,340,381	4,591,966	9,748,396
MAN	10	1	490	1632	1656	9.80	40.99	4,789	20,035	24,825	2,969	0	0	3,072	804	0	31,870		
MAN	10	3	5,299	351	375	3.80	15.89	21,038	88,041	109,077	32,165	92,997	17,275	33,225	8,690	0	293,429		
			5,789			3.8	5.50				6			36,297			325,099	103,276	221,824
MAN	11	1	6,426	1584	1608	9.50	39.73	61,343	256,589	317,912	38,954	0	0	40,304	10,542	0	407,711		
MAN	11	2	1,726	1568	1592	9.41	39.33	16,308	68,184	84,472	10,460	0	0	10,822	2,831	0	108,584		
MAN	11	3	125,116	439	463	4.15	17.36	519,840	2,173,864	2,693,724	758,454	2,195,786	407,878	784,477	205,190	0	7,046,510		
MAN	11	4	57	984	1008	6.30	26.34	357	1,493	1,851	402	0	0	357	93	456	3,160		
			133,327			4.15	5.85				6			835,960			7,565,965	2,425,218	5,140,747
MAN	12	1	9,188	1644	1668	9.88	41.26	91,018	380,696	471,718	55,879	0	0	57,609	15,066	0	600,072		
MAN	12	2	602	1651	1675	9.91	41.45	5,966	24,953	30,919	3,646	0	0	3,775	987	0	39,329		
MAN	12	3	54,881	520	544	4.47	18.70	236,754	997,952	1,236,706	333,128	963,162	178,912	344,104	90,005	0	3,146,016		
			64,671			4.47	6.17				6			405,487			3,785,417	1,197,060	2,588,356
Manitoba			4,655,536														272,212,148	86,834,193	185,577,954
SASK	1a	1	117,830	1352	1376	8.09	33.85	945,127	3,952,260	4,897,388	714,050	0	0	736,794	193,241	0	6,543,473		
SASK	1a	2	38,875	1355	1379	8.12	33.93	297,198	1,242,701	1,539,898	222,251	0	0	229,952	60,147	0	2,052,247		
SASK	1a	3	705,239	669	693	5.06	21.14	3,546,913	14,824,044	18,370,957	4,280,801	12,378,944	2,299,079	4,421,849	1,156,592	0	42,906,222		
SASK	1a	4	1,552	959	983	8.20	25.93	9,731	40,662	50,393	10,957	0	0	9,731	2,545	12,416	86,043		
			861,296			5.06	6.76				6			5,400,326			51,587,985	16,450,754	35,137,231
SASK	1b	1	82,728	1345	1369	8.05	33.87	494,382	2,067,081	2,561,444	380,132	0	0	393,305	102,874	0	3,437,754		
SASK	1b	2	131,467	1345	1369	8.05	33.87	1,061,634	4,439,095	5,500,729	796,690	0	0	824,298	215,606	0	7,337,323		
SASK	1b	3	487,910	670	694	5.06	21.17	2,462,562	10,292,992	12,755,554	2,961,614	8,562,621	1,590,587	3,059,196	800,172	0	29,729,942		
SASK	1b	4	2,566	941	965	6.14	25.67	15,886	66,399	82,285	18,116	0	0	16,089	4,208	20,528	141,226		
			684,671			5.06	6.76				6			4,292,887			40,646,246	13,077,216	27,569,030

Table B4 (Cont'd)

SASK 2a	1	140,079	1285	1309	7.89	32.15	1,078,895	4,509,930	5,588,826	848,879	0	0	678,295	229,730	0	7,545,729			
SASK 2a	2	13,714	1301	1325	7.79	32.56	105,760	442,064	547,823	83,107	0	0	65,987	22,491	0	739,408			
SASK 2a	3	601,764	730	754	5.29	22.15	3,191,162	13,349,745	16,540,907	3,852,707	10,560,956	1,961,751	3,773,080	986,893	0	37,476,277			
SASK 2a	4	0	903	927	5.06	25.01	0	0	0	0	0	0	0	0	0	0			
		755,557		5.29	6.99					6			4,737,342			45,761,414	14,804,917	31,156,497	
SASK 2b	1	277,890	1242	1266	7.43	31.08	2,015,801	8,424,277	10,440,078	1,884,013	0	0	1,742,370	455,740	0	14,322,201			
SASK 2b	2	78,885	1268	1292	7.59	31.71	597,753	2,498,197	3,095,950	476,831	0	0	493,355	129,043	0	4,195,179			
SASK 2b	3	775,576	769	793	5.45	22.79	4,232,137	17,894,566	21,926,705	4,707,746	13,811,359	2,526,378	4,862,862	1,271,945	0	48,908,994			
SASK 2b	4	0	856	880	5.76	24.23	0	0	0	0	0	0	0	0	0	0			
		1,132,151			7.43					6			7,098,587			67,426,374	22,371,304	45,055,071	
SASK 3an	1	117,977	1204	1228	7.25	30.33	864,086	3,812,086	4,476,154	714,941	0	0	739,716	193,482	0	6,124,293			
SASK 3an	2	731	1311	1335	7.85	32.82	5,869	24,543	30,412	4,430	0	0	4,583	1,199	0	40,824			
SASK 3an	3	294,603	864	888	5.82	24.36	1,719,957	7,198,328	8,918,285	1,788,240	5,170,263	980,406	1,847,161	483,149	0	19,165,523			
SASK 3an	4	0	841	865	6.13	25.63	0	0	0	0	0	0	0	0	0	0			
		413,311			7.25					6			2,591,460			25,330,439	8,092,629	17,237,810	
SASK 3as	1	172,098	1269	1293	7.80	31.76	1,328,969	5,554,648	6,883,617	1,042,914	0	0	1,079,054	282,241	0	9,267,826			
SASK 3as	2	13,147	1376	1400	8.24	34.44	108,506	453,553	562,059	79,871	0	0	82,432	21,561	0	745,723			
SASK 3as	3	635,392	822	846	5.66	23.67	3,596,862	15,042,003	18,638,865	3,856,829	11,151,130	2,071,378	3,983,906	1,042,043	0	40,744,152			
SASK 3as	4	0	968	992	6.24	26.06	0	0	0	0	0	0	0	0	0	0			
		820,637			7.80					6			5,145,394			50,777,701	16,355,295	34,422,406	
SASK 3bn	1	266,540	1112	1136	6.81	28.46	1,805,312	7,548,774	9,354,085	1,815,232	0	0	1,671,208	437,126	0	13,077,849			
SASK 3bn	2	7,252	1161	1185	7.00	29.27	50,814	212,393	263,208	43,947	0	0	45,470	11,893	0	364,518			
SASK 3bn	3	478,868	956	982	6.20	25.91	2,962,945	12,388,524	15,351,469	2,905,515	8,400,623	1,560,456	3,001,248	785,016	0	32,004,328			
SASK 3bn	4	264	651	675	6.17	25.79	1,606	6,721	8,329	1,864	0	0	1,655	433	2,112	14,293			
		752,724			6.81					6			4,719,579			45,460,888	14,407,137	31,053,751	
SASK 3bs	1	108,448	1141	1165	6.93	28.99	743,761	3,109,519	3,853,280	657,195	0	0	679,969	177,855	0	5,368,299			
SASK 3bs	3	448,214	944	968	6.14	25.87	2,767,695	11,573,941	14,341,636	2,720,659	7,866,156	1,461,178	2,810,302	735,071	0	29,935,001			
		556,662			6.93					6			3,490,271			35,303,300	10,721,310	24,581,990	
SASK 4a	1	51,874	1061	1085	6.50	27.62	339,775	1,420,419	1,760,194	314,356	0	0	325,250	85,073	0	2,484,874			
SASK 4a	3	201,869	1003	1027	6.36	26.65	1,293,446	5,406,870	6,700,316	1,224,131	3,539,291	657,441	1,264,465	330,737	0	13,716,380			
		253,543			6.80					6			1,589,715			16,201,254	4,799,569	11,401,685	
SASK 4b	1	290,874	1012	1036	6.41	26.80	1,867,741	7,807,068	9,674,809	1,762,696	0	0	1,823,780	477,033	0	13,738,318			
SASK 4b	2	84	1001	1025	6.37	26.61	535	2,235	2,770	509	0	0	527	138	0	3,944			
SASK 4b	3	158,464	1004	1028	6.38	26.66	1,004,295	4,196,814	5,201,109	961,876	2,781,043	516,593	993,569	259,881	0	10,714,072			
		449,422			6.41					6			2,817,876			24,456,334	8,422,168	16,034,166	
SASK 5a	1	235,941	1322	1346	7.91	33.09	1,867,298	7,807,275	9,674,573	1,429,802	0	0	1,479,350	386,943	0	12,970,669			
SASK 5a	2	206,166	1274	1298	7.62	31.86	1,548,022	6,470,385	8,018,406	1,249,366	0	0	1,292,661	338,112	0	10,898,545			
SASK 5a	3	807,742	713	737	5.23	21.87	4,225,395	17,665,755	21,891,150	4,902,994	14,175,872	2,633,239	5,064,542	1,324,697	0	49,992,494			
SASK 5a	4	13,150	754	778	5.39	22.54	70,097	293,208	363,304	92,839	0	0	82,451	21,566	105,200	665,360			
		1,262,999		5.23	6.93					6			7,919,004			74,527,068	24,337,991	50,189,077	

Table B4 (Cont'd)

SASK 5b	1	290,986	1300	1324	7.79	32.57	2,295,229	9,595,500	11,890,730	1,763,375	0	0	1,824,482	477,217	0	15,955,804		
SASK 5b	2	203,672	1274	1298	7.82	31.87	1,529,317	6,393,249	7,922,566	1,234,252	0	0	1,277,023	334,022	0	10,767,863		
SASK 5b	3	822,851	755	779	5.39	22.56	4,444,677	18,567,373	23,032,051	4,994,706	14,441,035	2,662,494	5,159,276	1,349,476	0	51,659,037		
SASK 5b	4	82,776	713	737	5.23	21.86	432,796	1,810,026	2,242,822	584,399	0	0	519,006	135,753	662,208	4,144,187		
		1,400,285		5.39	7.09					6			8,779,787			82,526,892	27,207,536	55,319,354
SASK 6a	1	357,016	1205	1229	7.25	30.32	2,564,940	10,722,284	13,287,224	2,163,517	0	0	2,236,490	565,506	0	18,274,737		
SASK 6a	2	105,029	1153	1177	6.97	29.15	726,123	3,035,307	3,761,430	636,476	0	0	658,532	172,248	0	5,228,665		
SASK 6a	3	740,422	834	858	5.71	23.86	4,234,090	17,705,251	21,939,340	4,494,362	12,994,406	2,413,776	4,642,446	1,214,292	0	47,898,622		
SASK 6a	4	9,566	863	887	5.82	24.34	55,766	233,334	289,099	67,877	0	0	60,104	15,721	76,888	509,290		
		1,212,053			7.25					6			7,599,572			71,711,334	23,731,996	47,979,338
SASK 6b	1	388,556	1125	1149	6.87	28.71	2,541,421	10,825,745	13,167,166	2,233,461	0	0	2,310,859	604,435	0	18,315,921		
SASK 6b	2	99,966	1101	1125	6.76	28.27	669,823	2,800,493	3,470,116	605,794	0	0	626,787	163,944	0	4,866,641		
SASK 6b	3	439,162	922	946	6.05	25.31	2,652,408	11,091,379	13,743,787	2,865,713	7,707,293	1,431,668	2,753,546	720,226	0	29,022,233		
SASK 6b	4	19,483	850	874	5.77	24.13	110,751	462,985	573,737	137,550	0	0	122,158	31,952	155,864	1,021,261		
		927,169			6.87					6			5,813,350			53,226,056	17,801,645	35,424,411
SASK 7a	1	364,555	1100	1124	6.76	28.26	2,460,527	10,290,122	12,750,649	2,209,203	0	0	2,285,760	597,870	0	17,843,462		
SASK 7a	2	137,887	1099	1123	6.75	28.24	932,130	3,898,013	4,830,144	834,383	0	0	863,297	225,807	0	6,753,631		
SASK 7a	3	428,722	1020	1044	6.44	26.94	2,736,958	11,440,129	14,177,087	2,802,343	7,524,071	1,397,634	2,688,087	703,104	0	29,092,325		
SASK 7a	4	2,039	950	974	6.16	25.77	12,406	51,871	64,277	14,395	0	0	12,785	3,344	16,312	111,113		
		933,003			6.76					6			5,849,929			53,800,551	17,811,027	35,989,524
SASK 7b	1	337,436	1030	1054	6.48	27.09	2,170,629	9,071,867	11,242,496	2,044,862	0	0	2,115,724	553,395	0	15,956,477		
SASK 7b	2	160,433	1005	1029	6.36	26.66	1,016,778	4,248,320	5,265,099	972,224	0	0	1,005,915	263,110	0	7,506,348		
SASK 7b	3	261,599	1006	1030	6.39	26.70	1,679,759	7,020,308	8,700,066	1,567,906	4,591,082	852,813	1,640,226	429,022	0	17,801,096		
SASK 7b	4	6,579	927	951	6.08	25.40	39,849	166,524	206,473	48,448	0	0	41,250	10,790	52,832	357,593		
		766,047			6.48					6			4,803,115			41,621,513	14,409,344	27,212,168
SASK 8a	1	254,195	1290	1314	7.88	32.12	1,964,340	8,211,186	10,175,526	1,540,422	0	0	1,593,803	416,880	0	13,726,630		
SASK 8a	2	110,325	1246	1270	7.45	31.15	814,398	3,403,726	4,218,125	668,570	0	0	691,738	180,933	0	5,759,365		
SASK 8a	3	468,428	849	873	5.77	24.12	2,704,387	11,311,443	14,015,830	2,843,358	8,220,911	1,527,075	2,937,044	768,222	0	30,312,440		
SASK 8a	4	110,407	661	685	5.03	21.02	560,158	2,341,448	2,901,607	779,473	0	0	692,252	181,067	883,256	5,437,655		
		943,355		5.77	7.47					6			5,914,836			55,236,091	18,587,863	36,648,229
SASK 8b	1	207,021	1194	1218	7.19	30.07	1,459,327	6,099,657	7,558,994	1,254,547	0	0	1,298,022	339,514	0	10,451,078		
SASK 8b	2	171,256	1161	1185	7.00	29.26	1,199,077	5,011,619	6,210,696	1,037,811	0	0	1,073,775	280,860	0	8,803,142		
SASK 8b	3	379,830	877	901	5.87	24.57	2,233,511	9,341,823	11,575,333	2,306,175	6,867,772	1,238,572	2,382,161	623,065	0	24,793,098		
SASK 8b	4	66,535	744	768	5.35	22.38	352,110	1,473,060	1,825,170	469,737	0	0	417,174	109,117	532,290	3,353,479		
		824,742			7.19					6			5,171,132			47,200,797	16,098,964	31,101,833
SASK 9a	1	284,395	1180	1184	7.12	29.77	1,977,235	8,267,245	10,244,480	1,723,434	0	0	1,783,157	466,408	0	14,217,478		
SASK 9a	2	310,397	1085	1109	6.70	28.00	2,071,112	8,659,548	10,730,660	1,861,008	0	0	1,946,189	509,051	0	15,066,906		
SASK 9a	3	440,706	979	1003	6.26	26.25	2,759,180	11,532,809	14,291,990	2,875,085	7,734,390	1,436,702	2,763,227	722,758	0	29,824,151		
SASK 9a	4	95,191	837	861	5.72	23.91	539,230	2,254,607	2,793,836	672,048	0	0	596,648	156,113	761,528	4,980,374		
		1,130,689			7.12					6			7,089,420			63,866,910	21,991,901	41,897,008

Table B4 (Cont'd)

SASK 9b	1	443,110	1	1068	6.85	27.80	2,949,275	12,328,266	15,277,540	2,885,247	0	0	2,778,300	726,700	0	21,467,787	
SASK 9b	2	214,379	1011	1036	6.41	28.78	1,365,373	5,708,635	7,074,008	1,299,137	0	0	1,344,156	351,582	0	10,068,883	
SASK 9b	3	351,966	1040	1064	6.52	27.27	2,311,703	9,666,969	11,978,693	2,136,446	6,177,038	1,147,416	2,206,839	577,226	0	24,223,659	
SASK 9b	4	39,376	934	958	6.10	25.52	241,318	1,008,818	1,250,136	278,009	0	0	246,900	64,580	315,024	2,154,649	
		1,048,835			6.85					6			6,576,195			57,914,978	19,906,866	38,008,080
Saskatchewan		17,129,151														1,004,606,124	331,287,456	673,318,666
Total		31,142,044															566,281,502	1,130,888,974

PORTS:

1 = VANCOUVER
2 = PRINCE RUPERT
3 = THUNDER BAY
4 = CHURCHILL

Total Pooled Costs ($) =	1,130,888,974
Crow Benefit ($) =	720,000,000
Total Pooled (Net of Crow) ($) =	410,888,974
($/t) =	13.19

	Paid Direct By Farmers ($)	CWB Payment By Province ($)	Total Paid By Province (Direct + CWB) ($)	($/t)	Change From Existing Costs ($)
Alberta	166,348,936	120,473,118	286,822,055	31.41	(6,393,166)
British Colum.	4,010,914	2,988,104	6,999,018	30.90	(208,177)
Manitoba	86,634,193	61,425,268	148,059,462	31.80	3,881,567
Saskatchewan	331,287,456	226,002,483	557,289,941	32.53	4,919,778

Regina dif= 1.7

NOTES:

1. The producer rail rate differential at Regina is equal to $7.18 (west) -$5.48 (east) = $1.70

2. It is assumed that the capacity restiction is epresented by a North south dividing line through Regina. This capacity restriction is approximated by 8A, 5B, 5A, 1B, 1A and 2A falling on the east side of the boundary and the rest of Saskatchewan falling on the west.

Table B5 **An Estimate of Saskatchewan's Total Grain Transportation Costs Under the NGB Price Pooling Proposal (with Churchill as a Pooling Point)**

Prov.	Crop Dist.	Port of Exp.	Tonnage	Haul Distance Low (miles)	Haul Distance High (mi	Producer WGTA RATE $/t	GOVT WGTA RATE $/t	PRODUCER WGTA PAYMENT ($)	GOVT PAYMENT ($)	TOTAL WGTA PAYMENT ($)	PORT TERMINAL CHARGES ($)	LAKER CHARGES ($)	TRANS-SHIPMENT CHARGES ($)	PRIMARY ELEVATOR ($)	MARKETING CHARGES ($)	PORT DIFFERENTIALS BASIS=VANC. ($)	TOTAL ACTUAL COST ($)	TOTAL PAID DIRECT BY PRODUCER ($)	TOTAL POOLED COSTS ($)
ALB	1	1	750,013	976	1000	6.27	26.20	4,884,327	19,579,390	24,263,718	4,545,079	0	0	4,702,582	1,230,021	0	34,741,399		
ALB	1	2	110,462	1017	1041	6.43	26.87	707,709	2,957,565	3,665,274	669,521	0	0	692,722	181,190	0	5,208,708		
ALB	1	3	116,189	1088	1112	6.71	28.05	792,766	3,315,566	4,108,352	717,268	2,073,866	385,231	740,920	193,797	0	8,219,452		
			976,664			6.27					6			6,136,223			48,169,559	16,203,150	29,966,408
ALB	2	1	1,534,566	871	895	5.85	24.47	8,978,966	37,546,871	46,527,839	9,299,664	0	0	9,821,929	2,516,741	0	67,966,173		
ALB	2	2	128,141	889	913	5.92	24.76	755,125	3,157,305	3,912,430	776,534	0	0	803,444	210,151	0	5,702,560		
ALB	2	3	210,530	1209	1233	7.29	30.34	1,514,713	6,331,916	7,846,629	1,277,917	3,894,802	686,326	1,320,023	345,269	0	15,170,966		
			1,873,266			5.85					6			11,745,397			88,839,701	34,056,030	54,783,671
ALB	3	1	869,110	809	833	5.81	23.46	5,005,966	20,926,887	25,932,855	5,366,007	0	0	5,574,720	1,458,140	0	38,353,722		
ALB	3	2	20,293	787	811	5.52	23.09	112,079	470,952	583,630	122,976	0	0	127,237	33,281	0	867,123		
ALB	3	3	76,526	1238	1262	7.41	30.96	566,836	2,377,099	2,945,93	464,513	1,343,031	249,475	479,818	125,503	0	5,808,275		
			965,929			5.81					6			6,181,775			44,829,119	17,667,566	27,161,553
ALB	4	1	1,527,400	877	901	5.86	24.57	8,995,615	37,199,579	46,095,194	9,256,044	0	0	9,576,798	2,504,936	0	67,432,972		
ALB	4	2	678,011	852	876	5.78	24.17	3,916,963	16,379,554	20,296,517	4,108,747	0	0	4,251,129	1,111,938	0	29,768,330		
ALB	4	3	242,490	1151	1175	6.97	29.13	1,651,639	6,907,711	8,559,550	1,471,914	4,255,700	790,517	1,520,412	397,684	0	16,995,777		
ALB	4	4	29,284	1048	1072	6.55	27.40	190,855	797,760	988,615	206,745	0	0	183,811	48,026	234,272	1,661,269		
			2,477,185			5.86					6			15,531,950			115,858,348	45,100,539	70,748,809
ALB	5	1	751,954	860	884	5.81	24.29	4,330,063	18,107,043	22,437,106	4,556,841	0	0	4,714,752	1,233,205	0	32,941,903		
ALB	5	2	165,789	857	881	5.80	24.25	939,720	3,929,722	4,869,443	1,004,681	0	0	1,039,497	271,894	0	7,185,515		
ALB	5	3	68,953	1248	1272	7.48	31.24	516,838	2,159,717	2,676,555	418,545	1,210,125	224,787	432,335	113,083	0	5,075,430		
ALB	5	4	13,582	1183	1207	7.12	29.75	96,181	401,976	498,156	95,889	0	0	85,159	22,274	108,856	810,135		
			1,000,276			5.81					6			6,271,743			46,012,983	18,145,043	27,867,940
ALB	6	1	384,137	826	850	5.66	23.73	2,072,991	8,666,277	10,739,267	2,206,670	0	0	2,283,139	597,185	0	15,826,261		
ALB	6	2	205,583	824	848	5.67	23.70	1,169,354	4,888,382	6,057,736	1,245,833	0	0	1,289,005	337,156	0	8,929,731		
ALB	6	3	96,412	1283	1307	7.70	32.19	746,886	3,122,120	3,869,005	585,221	1,692,031	314,303	604,503	158,116	0	7,223,179		
ALB	6	4	25,906	1202	1226	7.20	30.10	187,536	783,756	971,292	182,896	0	0	162,431	42,486	207,248	1,566,353		
			692,038			5.68					6			4,339,076			33,545,524	12,463,604	21,081,920
ALB	7	1	545,236	929	953	6.06	25.42	3,378,511	14,124,455	17,502,967	3,304,130	0	0	3,418,630	894,187	0	25,119,914		
ALB	7	2	467,004	932	956	6.10	25.48	2,822,059	11,798,837	14,620,895	2,830,044	0	0	2,928,115	765,887	0	21,144,941		
ALB	7	3	86,561	1567	1591	9.40	39.31	814,020	3,404,072	4,218,092	525,425	1,519,146	282,189	542,737	141,960	0	7,229,549		
ALB	7	4	24,719	1476	1502	8.86	37.04	215,871	901,537	1,117,208	174,516	0	0	154,968	40,539	197,752	1,685,003		
			1,123,520			6.06					6			7,044,470			55,179,406	20,884,003	34,495,404
Alberta			9,130,883															166,348,936	266,085,706

Table B5 (Cont'd)

BC	1	1	13,129	684	708	5.12	21.40	67,990	284,553	352,543	79,562	0	0	82,319	21,532	0	535,955		
BC	1	2	1,831	701	725	5.18	21.68	9,485	39,896	49,181	11,096	0	0	11,480	3,003	0	74,760		
BC	1	3	1,004	1684	1708	10.11	42.27	10,854	45,396	56,251	6,094	17,620	3,273	6,295	1,647	0	91,180		
			15,964			5.12					6			100,094			701,895	278,572	423,323
BC	7	1	143,259	756	780	5.40	22.58	749,014	3,134,277	3,883,290	868,150	0	0	898,234	234,945	0	5,884,819		
BC	7	2	54,564	756	780	5.40	22.58	283,875	1,187,185	1,470,860	330,858	0	0	342,116	89,485	0	2,233,119		
BC	7	3	10,900	1766	1790	10.61	44.34	113,365	473,902	587,267	66,163	191,295	35,534	66,343	17,876	0	966,478		
BC	7	4	1,787	1626	1650	9.76	40.83	17,441	72,963	90,404	12,816	0	0	11,204	2,931	14,296	131,452		
			210,510			5.40					6			1,319,898			9,215,867	3,732,342	5,483,525
British Columbia			226,474															4,010,914	5,906,848
MAN	1	1	54,154	1539	1563	9.23	38.59	497,869	2,081,563	2,579,452	328,173	0	0	339,546	88,813	0	3,335,983		
MAN	1	2	2,151	1556	1580	9.33	39.02	20,057	92,206	114,264	13,035	0	0	13,487	3,528	0	144,313		
MAN	1	3	555,119	597	621	4.77	19.96	2,649,700	11,080,822	13,730,522	3,369,572	9,742,336	1,809,688	3,480,596	910,395	0	33,043,112		
MAN	1	4	0	1131	1155	6.88	28.76	0	0	0	0	0	0	0	0	0	0		
			611,424			4.77	6.47				6			3,833,626			36,523,408	11,500,885	25,022,523
MAN	2	1	64,712	1424	1448	8.53	35.85	551,879	2,306,254	2,857,933	392,155	0	0	405,744	106,128	0	3,761,960		
MAN	2	2	15,776	1429	1453	8.56	35.79	133,806	558,446	692,054	95,603	0	0	98,916	25,873	0	912,445		
MAN	2	3	609,886	562	586	4.84	19.39	2,835,312	11,863,162	14,698,474	3,700,794	10,699,989	1,987,576	3,822,731	999,865	0	35,909,450		
MAN	2	4	883	909	933	6.00	25.11	5,140	21,508	26,648	6,234	0	0	5,536	1,448	7,064	46,930		
			691,057			4.84	6.34				6			4,332,927			40,630,785	12,908,945	27,721,840
MAN	3	1	54,820	1515	1539	9.09	38.00	469,185	2,044,933	2,534,118	332,209	0	0	343,721	89,905	0	3,299,953		
MAN	3	2	25,080	1519	1543	9.11	38.09	210,986	861,865	1,092,871	151,864	0	0	157,126	41,098	0	1,442,959		
MAN	3	3	513,803	577	601	4.89	19.84	2,403,224	10,054,036	12,457,263	3,117,570	9,013,733	1,674,346	3,220,291	842,309	0	30,325,511		
MAN	3	4	7,023	917	941	6.03	25.23	42,465	177,849	220,134	49,582	0	0	44,034	11,518	56,164	381,452		
			600,506			4.89	6.39				6			3,765,173			35,449,875	11,247,477	24,202,398
MAN	4	1	17,765	1495	1519	8.96	37.49	152,811	638,295	790,906	107,856	0	0	111,387	29,135	0	1,039,083		
MAN	4	2	19,809	1501	1525	9.00	37.64	168,112	694,777	860,888	118,831	0	0	122,948	32,159	0	1,134,626		
MAN	4	3	151,708	639	663	4.94	20.65	748,014	3,126,174	3,874,187	920,868	2,662,475	494,568	951,209	248,801	0	9,152,109		
MAN	4	4	4,603	922	946	6.06	25.32	26,737	111,764	138,501	32,497	0	0	28,861	7,549	36,824	244,231		
			193,885			4.94	6.64				6			1,214,405			11,570,249	3,676,141	7,894,107
MAN	5	1	22,536	1371	1395	8.21	34.33	184,577	771,593	956,170	136,568	0	0	141,301	36,959	0	1,270,998		
MAN	5	2	45,700	1371	1395	8.21	34.33	375,137	1,568,165	1,943,321	277,487	0	0	287,103	75,096	0	2,583,007		
MAN	5	3	164,809	714	738	5.24	21.90	865,465	3,621,628	4,487,093	999,177	2,888,888	536,825	1,032,098	269,959	0	10,213,641		
MAN	5	4	16,102	674	698	5.08	21.22	82,106	343,115	425,222	113,660	0	0	100,960	26,407	126,816	795,084		
			249,037			5.08					7			1,561,462			14,862,930	4,584,771	10,278,159
MAN	6	1	47,405	1405	1429	8.42	35.18	396,909	1,658,711	2,055,619	287,274	0	0	297,229	77,744	0	2,717,867		
MAN	6	2	73,233	1405	1429	8.42	35.18	610,724	2,552,375	3,163,099	443,792	0	0	459,171	120,102	0	4,196,164		
MAN	6	3	217,640	599	623	4.76	20.00	1,047,164	4,378,470	5,425,635	1,321,075	3,819,582	709,506	1,364,603	356,930	0	12,997,330		
MAN	6	4	20,090	790	814	5.53	23.13	110,591	462,301	572,892	141,835	0	0	125,964	32,948	160,720	1,034,359		
			358,368			4.76	6.46				6			2,246,967			20,935,720	6,744,486	14,191,235

Table B5 (Cont'd)

MAN	7	1	69,367	1520	1544	9.12	38.12	636,732	2,662,257	3,298,989	420,364	0	0	434,931	113,762	0	4,268,046		
MAN	7	2	17,153	1509	1533	9.05	37.84	153,267	640,971	794,237	103,947	0	0	107,549	28,131	0	1,033,865		
MAN	7	3	632,386	470	494	4.27	17.87	2,706,520	11,315,337	14,021,858	3,838,563	11,098,374	2,061,578	3,965,060	1,037,113	0	36,022,567		
MAN	7	4	0	915	939	6.03	25.20	0	0	0	0	0	0	0	0	0	0		
			718,906		4.27	5.97					6			4,507,541			41,324,477	13,163,169	28,161,309
MAN	8	1	57,820	1579	1603	9.47	39.82	543,893	2,273,852	2,817,746	349,177	0	0	361,277	94,497	0	3,822,697		
MAN	8	2	4,449	1593	1617	9.56	39.96	43,809	183,229	227,038	26,961	0	0	27,895	7,296	0	289,190		
MAN	8	3	712,857	498	520	4.36	18.30	3,123,907	13,061,771	16,185,678	4,327,042	12,510,640	2,323,914	4,469,613	1,169,065	0	40,965,973		
MAN	8	4	0	1030	1054	6.48	27.10	0	0	0	0	0	0	0	0	0	0		
			774,926		4.36	6.08					6			4,858,786			44,897,860	14,274,137	30,623,723
MAN	9	1	26,095	1593	1617	9.56	39.96	245,306	1,025,621	1,270,928	158,136	0	0	163,616	42,796	0	1,835,475		
MAN	9	2	156	1565	1589	9.39	39.27	1,475	6,168	7,643	945	0	0	978	256	0	9,823		
MAN	9	3	227,589	414	438	4.05	16.94	921,865	3,855,578	4,777,243	1,381,465	3,994,187	741,940	1,426,983	373,246	0	12,895,064		
MAN	9	4	0	980	1004	6.29	26.27	0	0	0	0	0	0	0	0	0	0		
			253,840		4.05	5.75					6			1,591,577			14,340,361	4,591,966	9,748,396
MAN	10	1	490	1632	1656	9.80	40.99	4,789	20,035	24,825	2,989	0	0	3,072	804	0	31,870		
MAN	10	3	5,299	351	375	3.80	15.89	21,036	88,041	109,077	32,165	92,997	17,275	33,225	8,690	0	293,429		
			5,789		3.8	5.50					6			36,297			325,099	103,276	221,824
MAN	11	1	6,426	1584	1608	9.50	39.73	61,343	256,569	317,912	38,954	0	0	40,304	10,542	0	407,711		
MAN	11	2	1,726	1568	1592	9.41	39.33	16,308	68,164	84,472	10,460	0	0	10,822	2,831	0	108,584		
MAN	11	3	125,116	439	463	4.15	17.36	519,840	2,173,884	2,693,724	759,454	2,195,786	407,878	784,477	205,190	0	7,046,510		
MAN	11	4	57	984	1008	6.30	26.34	357	1,493	1,851	402	0	0	357	93	456	3,160		
			133,327		4.15	5.85					6			835,960			7,565,965	2,425,218	5,140,747
MAN	12	1	9,168	1644	1668	9.86	41.26	91,018	380,898	471,716	55,879	0	0	57,609	15,068	0	600,072		
MAN	12	2	602	1651	1675	9.91	41.45	5,966	24,953	30,919	3,648	0	0	3,775	987	0	39,329		
MAN	12	3	54,881	520	544	4.47	18.70	238,754	997,952	1,236,706	333,126	963,162	178,912	344,104	90,005	0	3,146,016		
			64,671		4.47	6.17					6			405,487			3,785,417	1,197,060	2,588,356
Manitoba			4,655,536															86,417,531	185,794,617
SASK 1a		1	117,830	1352	1376	8.09	33.85	945,127	3,952,260	4,897,388	714,050	0	0	738,794	193,241	0	6,543,473		
SASK 1a		2	36,875	1355	1379	8.12	33.93	297,196	1,242,701	1,539,898	222,251	0	0	229,952	60,147	0	2,052,247		
SASK 1a		3	705,239	669	693	5.08	21.14	3,546,913	14,824,044	18,370,957	4,280,801	12,376,944	2,299,079	4,421,849	1,156,592	0	42,908,222		
SASK 1a		4	1,552	959	983	6.20	25.83	9,731	40,682	50,383	10,957	0	0	9,731	2,545	12,416	86,043		
			861,296		5.08	6.76					6			5,400,326			51,587,985	16,450,754	35,137,231
SASK 1b		1	62,728	1345	1369	8.05	33.67	494,382	2,067,061	2,561,444	380,132	0	0	393,305	102,874	0	3,437,754		
SASK 1b		2	131,467	1345	1369	8.05	33.67	1,061,634	4,439,095	5,500,729	796,690	0	0	824,298	215,606	0	7,337,323		
SASK 1b		3	487,910	670	694	5.08	21.17	2,462,562	10,292,992	12,755,554	2,961,614	8,562,821	1,590,587	3,059,196	800,172	0	29,729,942		
SASK 1b		4	2,566	941	965	6.14	25.67	15,886	66,399	82,285	18,116	0	0	16,089	4,208	20,526	141,226		
			684,671		5.08	6.76					6			4,292,887			40,646,246	13,077,216	27,569,030

Table 86 (Cont'd)

SASK 2a	1	140,079	1285	1309	7.89	32.15	1,078,895	4,509,930	5,588,826	848,879	0	0	878,295	229,730	0	7,545,729		
SASK 2a	2	13,714	1301	1325	7.78	32.56	105,760	442,064	547,823	83,107	0	0	85,987	22,491	0	739,408		
SASK 2a	3	601,764	730	754	5.29	22.15	3,191,162	13,349,745	16,540,907	3,852,707	10,560,958	1,961,751	3,773,060	986,893	0	37,476,277		
SASK 2a	4	0	903	927	5.96	25.01	0	0	0	0	0	0	0	0	0	0		
		755,557		5.29	6.99					6			4,737,342			45,761,414	14,804,917	31,156,497
SASK 2b	1	277,890	1242	1266	7.43	31.08	2,015,601	8,424,277	10,440,078	1,884,013	0	0	1,742,370	455,740	0	14,322,201		
SASK 2b	2	78,885	1268	1292	7.59	31.71	597,753	2,498,197	3,095,950	478,831	0	0	493,355	129,043	0	4,195,179		
SASK 2b	3	775,576	769	793	5.45	22.79	4,232,137	17,694,568	21,926,705	4,707,748	13,811,359	2,528,378	4,862,862	1,271,945	0	48,908,994		
SASK 2b	4	0	856	880	5.79	24.23	0	0	0	0	0	0	0	0	0	0		
		1,132,151			7.43					6			7,098,587			67,426,374	22,371,304	45,055,071
SASK 3an	1	117,977	1204	1228	7.25	30.33	864,068	3,612,066	4,476,154	714,941	0	0	739,716	193,482	0	6,124,293		
SASK 3an	2	731	1311	1335	7.85	32.82	5,869	24,543	30,412	4,430	0	0	4,583	1,199	0	40,624		
SASK 3an	3	294,803	864	888	5.82	24.36	1,719,957	7,196,328	8,916,285	1,786,240	5,170,283	960,406	1,847,161	483,149	0	19,165,523		
SASK 3an	4	0	941	965	6.13	25.63	0	0	0	0	0	0	0	0	0	0		
		413,311			7.25					6			2,591,460			25,330,439	8,092,629	17,237,810
SASK 3as	1	172,096	1289	1293	7.80	31.76	1,326,989	5,554,648	6,883,617	1,042,814	0	0	1,079,054	282,241	0	9,287,826		
SASK 3as	2	13,147	1378	1400	8.24	34.44	108,508	453,553	562,059	79,671	0	0	82,432	21,561	0	745,723		
SASK 3as	3	635,392	822	846	5.66	23.67	3,596,862	15,042,003	18,638,865	3,856,829	11,151,130	2,071,378	3,983,908	1,042,043	0	40,744,152		
SASK 3as	4	0	968	992	6.24	26.06	0	0	0	0	0	0	0	0	0	0		
		820,637			7.80					6			5,145,394			50,777,701	16,355,295	34,422,406
SASK 3bn	1	266,540	1112	1136	6.81	28.46	1,805,312	7,548,774	9,354,085	1,615,232	0	0	1,671,206	437,126	0	13,077,649		
SASK 3bn	2	7,252	1161	1185	7.00	29.27	50,814	212,393	263,208	43,947	0	0	45,470	11,893	0	364,518		
SASK 3bn	3	478,668	956	982	6.20	25.91	2,962,945	12,388,524	15,351,469	2,905,515	8,400,623	1,560,458	3,001,248	785,016	0	32,004,328		
SASK 3bn	4	264	951	975	6.17	25.79	1,608	6,721	8,329	1,864	0	0	1,655	433	2,112	14,393		
		752,724			6.81					6			4,719,579			45,460,888	14,407,137	31,053,751
SASK 3bs	1	108,448	1141	1165	6.93	28.99	743,761	3,109,519	3,853,280	657,195	0	0	679,969	177,855	0	5,368,299		
SASK 3bs	3	448,214	944	968	6.14	25.67	2,767,695	11,573,941	14,341,636	2,720,659	7,866,156	1,461,178	2,810,302	735,071	0	29,935,001		
		556,662			6.93					6			3,490,271			35,303,300	10,721,310	24,581,990
SASK 4a	1	51,874	1081	1085	6.60	27.62	339,775	1,420,419	1,760,194	314,356	0	0	325,250	85,073	0	2,484,874		
SASK 4a	3	201,669	1003	1027	6.38	26.65	1,293,446	5,406,870	6,700,316	1,224,131	3,539,291	657,441	1,264,465	330,737	0	13,716,380		
		253,543			6.60					6			1,589,715			16,201,254	4,799,569	11,401,685
SASK 4b	1	290,874	1012	1036	6.41	26.80	1,867,741	7,807,068	9,674,809	1,792,696	0	0	1,823,780	477,033	0	13,736,318		
SASK 4b	2	84	1001	1025	6.37	26.61	535	2,235	2,770	509	0	0	527	138	0	3,944		
SASK 4b	3	158,464	1004	1028	6.38	26.66	1,004,295	4,196,814	5,201,109	961,876	2,[illegible]	13	516,593	993,569	259,881	0	10,714,072	
		449,422			6.41								2,817,876			24,456,334	8,422,168	3,0[illegible]
SASK 5a	1	235,941	1322	1346	7.91	33.09	1,867,298	7,807,275	9,674,573	1,429,802	0	0	1,479,35[illegible]	[illegible]36,943	0	12,970,669		
SASK 5a	2	206,166	1274	1298	7.62	31.86	1,548,022	6,470,385	8,018,406	1,249,368	0	0	1,292,661	[illegible],112	0	10,896,545		
SASK 5a	3	807,742	713	737	5.23	21.87	4,225,395	17,665,755	21,891,150	4,902,994	14,175,872	2,633,239	5,064,542	[illegible]97	0	49,992,494		
SASK 5a	4	13,150	754	778	5.39	22.54	70,097	293,208	363,304	92,839	0	0	82,451	[illegible]56	105,200	655,360		
		1,262,999		5.23	6.93					6			7,919,004			74,527,068	24,337,991	[illegible]99,07[illegible]

Table B5 (Cont'd)

SASK 5b	1	280,966	1300	1324	7.79	32.57	2,295,229	9,595,500	11,890,730	1,763,375	0	0	1,824,482	477,217	0	15,955,804			
SASK 5b	2	203,672	1274	1298	7.62	31.87	1,529,317	6,393,249	7,922,566	1,234,252	0	0	1,277,023	334,022	0	10,767,863			
SASK 5b	3	822,851	755	779	5.39	22.56	4,444,677	18,567,373	23,032,051	4,994,706	14,441,035	2,882,494	5,159,276	1,349,476	0	51,859,037			
SASK 5b	4	92,776	713	737	5.23	21.88	432,796	1,810,026	2,242,822	584,399	0	0	519,008	135,753	662,208	4,144,187			
		1,400,265		5.39	7.09					6			8,779,787			82,526,892	27,207,536	55,319,354	
SASK 6a	1	357,016	1205	1229	7.25	30.32	2,584,940	10,722,264	13,267,224	2,163,517	0	0	2,236,490	585,506	0	18,274,737			
SASK 6a	2	105,029	1153	1177	6.97	29.15	726,123	3,035,307	3,761,430	636,476	0	0	658,532	172,248	0	5,228,665			
SASK 6a	3	740,422	834	858	5.71	23.86	4,234,090	17,705,251	21,939,340	4,494,362	12,994,406	2,413,776	4,642,446	1,214,292	0	47,898,622			
SASK 6a	4	9,586	863	887	5.82	24.34	55,766	233,334	289,099	67,877	0	0	60,104	15,721	76,868	509,290			
		1,212,053			7.25					6			7,599,572			71,711,334	23,731,998	47,979,336	
SASK 6b	1	368,558	1125	1149	6.87	28.71	2,541,421	10,625,745	13,167,166	2,233,461	0	0	2,310,859	604,435	0	18,315,921			
SASK 6b	2	99,866	1101	1125	6.76	26.27	669,823	2,800,463	3,470,116	605,794	0	0	626,787	163,944	0	4,866,841			
SASK 6b	3	439,162	922	946	6.05	25.31	2,652,406	11,091,379	13,743,787	2,865,713	7,707,293	1,431,668	2,753,546	720,226	0	29,022,233			
SASK 6b	4	19,483	850	874	5.77	24.13	110,751	462,985	573,737	137,550	0	0	122,158	31,952	155,864	1,021,261			
		927,169			6.87					6			5,813,350			53,226,056	17,801,845	35,424,411	
SASK 7a	1	384,565	1100	1124	6.76	28.26	2,460,527	10,290,122	12,750,649	2,209,203	0	0	2,285,760	597,870	0	17,843,462			
SASK 7a	2	137,887	1098	1123	6.75	28.24	932,130	3,898,013	4,830,144	834,383	0	0	863,297	225,807	0	6,753,631			
SASK 7a	3	426,722	1020	1044	6.44	26.94	2,736,958	11,440,129	14,177,087	2,802,343	7,524,071	1,397,634	2,686,087	703,104	0	29,092,325			
SASK 7a	4	2,039	950	974	6.16	25.77	12,406	51,871	64,277	14,395	0	0	12,785	3,344	16,312	111,113			
		833,053			6.76					6			5,849,929			53,800,551	17,811,027	35,989,524	
SASK 7b	1	337,436	1030	1054	6.46	27.09	2,170,629	9,071,667	11,242,496	2,044,662	0	0	2,115,724	553,395	0	15,956,477			
SASK 7b	2	160,433	1005	1029	6.30	26.56	1,016,778	4,248,320	5,265,099	972,224	0	0	1,005,915	263,110	0	7,506,348			
SASK 7b	3	261,599	1006	1030	6.30	26.70	1,679,759	7,020,308	8,700,066	1,587,906	4,591,092	852,813	1,640,226	429,022	0	17,801,096			
SASK 7b	4	6,579	927	951	6.06	25.40	39,849	166,624	206,473	46,448	0	0	41,250	10,790	52,832	357,593			
		766,047			6.46					6			4,803,115			41,621,513	14,409,344	27,212,168	
SASK 8a	1	254,195	1290	1314	7.66	32.12	1,964,340	8,211,186	10,175,526	1,540,422	0	0	1,593,603	416,880	0	13,726,630			
SASK 8a	2	110,325	1246	1270	7.45	31.15	814,398	3,403,728	4,218,125	668,570	0	0	691,738	180,933	0	5,759,365			
SASK 8a	3	468,426	849	873	5.77	24.12	2,704,367	11,311,443	14,015,830	2,843,358	8,220,911	1,527,075	2,937,044	768,222	0	30,312,440			
SASK 8a	4	110,407	661	685	5.03	21.02	560,156	2,341,446	2,901,607	779,473	0	0	892,252	181,067	883,256	5,437,655			
		943,355			5.03					7			5,914,636			55,236,091	17,319,998	37,916,093	
SASK 8b	1	207,021	1194	1218	7.19	30.07	1,459,337	6,099,657	7,558,994	1,254,547	0	0	1,298,022	339,514	0	10,451,078			
SASK 8b	2	171,256	1161	1185	7.00	29.26	1,199,077	5,011,619	6,210,696	1,037,811	0	0	1,073,775	280,860	0	8,803,142			
SASK 8b	3	379,830	877	901	5.87	24.57	2,233,511	9,341,823	11,575,333	2,306,175	6,867,772	1,236,572	2,382,161	623,085	0	24,793,096			
SASK 8b	4	66,535	744	768	5.35	22.38	352,110	1,473,060	1,825,170	469,737	0	0	417,174	109,117	532,280	3,353,479			
		824,742			7.19					6			5,171,132			47,200,797	16,096,964	31,101,833	
SASK 9a	1	264,395	1160	1184	.12	28.77	1,977,235	8,267,245	10,244,480	1,723,434	0	0	1,783,157	466,408	0	14,217,478			
SASK 9a	2	310,287	1085	1109	6.70	26.00	2,071,112	8,659,548	10,730,660	1,861,006	0	0	1,946,189	509,051	0	15,066,906			
SASK 9a	3	440,706	979	1003	6.26	26.25	2,759,180	11,532,809	14,291,990	2,675,085	7,734,390	1,436,702	2,763,227	722,758	0	29,624,151			
SASK 9a	4	95,191	837	861	5.72	23.91	539,230	2,254,607	2,793,836	672,048	0	0	596,848	156,113	761,528	4,980,374			
		1,130,689			7.12					6			7,089,420			63,888,910	21,991,901	41,897,008	

Table B (Cont'd)

SASK 9b	1	443,110	1	1066	6.85	27.80	2,949,275	12,328,299	15,277,540	2,865,247	0	0	2,778,300	726,700	0	21,467,787		
SASK 9b	2	214,379	1011	1035	6.41	26.76	1,365,373	5,706,635	7,074,008	1,269,137	0	0	1,344,156	351,562	0	10,068,863		
SASK 9b	3	351,966	1040	1064	6.52	27.27	2,311,703	9,666,969	11,978,693	2,136,446	8,177,036	1,147,416	2,206,839	577,228	0	24,223,659		
SASK 9b	4	39,378	934	956	6.10	25.52	241,316	1,008,818	1,250,136	278,009	0	0	246,900	64,560	315,024	2,154,649		
		1,048,835			6.65					6			6,576,195			57,914,978	19,906,666	38,008,090
Saskatchewan		17,129,151														1,004,606,124	329,919,593	674,686,531
Total		31,142,044															586,696,975	1,132,473,501

PORTS:

1 = VANCOUVER
2 = PRINCE RUPERT
3 = THUNDER BAY
4 = CHURCHILL

Total Pooled Costs ($) =	1,132,473,501
Crow Benefit ($) =	720,000,000
Total Pooled (Net of Crow) ($) =	412,473,501
($/t) =	13.24

	Paid Direct By Farmers ($)	CWB Payment By Province ($)	Total Paid By Province (Direct + CWB) ($)	($/t)	Change From Existing Costs ($)
Alberta	166,346,936	120,937,703	287,266,640	31.46	(7,828,583)
British Colum.	4,010,914	2,999,627	7,010,541	30.96	(196,854)
Manitoba	88,417,531	61,662,145	148,079,676	31.81	3,701,781
Saskatchewan	329,919,593	226,874,025	556,793,618	32.51	4,423,455

Regina diff= 1.7

NOTES:

1. The producer rail rate differential at Regina is equal to $7.18 (west) - $5.48 (east) = $1.70

2. It is assumed that the capacity restriction is represented by a North south dividing line through Regina
this capacity restriction is approximated by
6A, 5B, 5A, 1B, 1A, and 2A falling on the east side of the boundary and
the rest of Sask. falling on the west

Appendix C

Economic Analysis of a Short Line Railway on the Churchill Rail Line

Table C1 **Economic Analysis on the Costs of Operating a Short Line Railway on the Churchill Rail Line**

		ANNUAL VOLUME (tonnes per year)									
		250,000	500,000	750,000	1,000,000	1,250,000	1,500,000	1,750,000	2,000,000	2,250,000	2,500,000
Total Cost Calculated From Statistical Model (1)											
Annual Volume (tonnes/year)		250000	500000	750000	1000000	1250000	1500000	1750000	2000000	2250000	2500000
Rail Car Capacity (tonnes/car)		87	87	87	87	87	87	87	87	87	87
Number of Rail Car Loads (CL) (cars/year)		2874	5747	8621	11494	14368	17241	20115	22989	25862	28736
Average Haul Length (AHL) (miles)		310	310	310	310	310	310	310	310	310	310
Total Car Miles (CM) (car miles)		890805	1781609	2672414	3563218	4454023	5344828	6235632	7126437	8017241	8908046
Total Costs (TC):	$/year =	1982186	3761551	5540916	7320281	9099646	10879011	12658375	14437740	16217105	17996470
	$/tonne =	7.93	7.52	7.39	7.32	7.28	7.25	7.23	7.22	7.21	7.20
Costs Not Included in the Statistical Model											
Capital Improvements (Line Rehabilitation)											
Initial Capital Cost ($) (2)		35,000,000	35,000,000	35,000,000	35,000,000	35,000,000	35,000,000	35,000,000	35,000,000	35,000,000	35,000,000
Ammortized Capital Cost:	($/year) (3)	4,025,861	4,025,861	4,025,861	4,025,861	4,025,861	4,025,861	4,025,861	4,025,861	4,025,861	4,025,861
	($/tonne)	16.10	8.05	5.37	4.03	3.22	2.68	2.30	2.01	1.79	1.61
Line Maintenance:											
Total ($/mile/year)		7100	7100	7100	7100	7100	7100	7100	7100	7100	7100
Less amount accounted for in model		3100	3100	3100	3100	3100	3100	3100	3100	3100	3100
Net Maintenance ($/mile/year)		4000	4000	4000	4000	4000	4000	4000	4000	4000	4000
Total Maint. (not in model):	($/year)	1240000	1240000	1240000	1240000	1240000	1240000	1240000	1240000	1240000	1240000
	($/tonne)	4.96	2.48	1.65	1.24	0.99	0.83	0.71	0.62	0.55	0.50
Adjusted total cost:											
Total Cost	($/tonne)	28.99	18.05	14.41	12.59	11.49	10.76	10.24	9.85	9.55	9.30

Notes:

(1) Statistical model after Wilson, Heads and Tolliver, 1990.

Model: TC = 202,821 + 162.8432*(CL) + 1.47218*(CM) – in CDN$

Where: TC = total cost ($)
CL = Number of Rail Car Loads per year
CM = Total Car Miles per year
Total costs in Canadian dollars assuming $1.0 US = $1.15 CDN

This statistical model was based on US data. There are, however, several differences between the US and Canadian cost bases for railways. These differences are outlined below.

- difference in factor prices and climatic differences (assume these differences are minimal)
- rail car costs are typically not incurred by US short line rail roads since Class 1 carriers typically supply the rail cars.
- the US data base does not include opportunity costs of the net liquidation value and working capital
- the US data base reflected the actual instead of normalized maintence expenditures (i.e. $3000/mile instead of $7,100/mile as sugested by Wilson et al.
- unique expenses incurred by the Churchill Rail Line of rehabilitating the line to run conventional hoooper cars

(2) Costs obtained for IBI Group report (1986).

(3) Ammortized at 11% over 30 years.

Appendix D

Economic Analysis of Shipping Potash via the Port of Churchill

Appendix D Economic Analysis of Shipping Potash via the Port of Churchill

This Appendix contains a summary of two examples illustrating the economics of shipping potash through the Port of Churchill. These examples have been adapted from the report "Study B Port of Churchill Additional Commodities", prepared by IBI Group, March 1986. Additional details are available in these reports.

It should be noted that the cost of rehabilitating the rail line is assumed to be equal to $26.25 million in this example (in the rest of this report a more conservative estimate of $35 million was used).

Table D1 Economics of Shipping Saskatchewan Potash Through the Port of Churchill (at 72,500 tonnes per year) (1)

Cost Component	Cost via Vancouver ($/tonne)	Cost via Churchill ($/tonne)	Churchill Advantage ($/tonne)
Rail Freight	34.54 (2)	25.18 (2)	9.36
Terminal Costs	4.50 (2)	39.08 (3)	−34.58
Car Costs	2.95 (2)	2.16 (2)	0.79
Ocean Freight	29.90 (2)	31.70 (2)	−1.80
Inventory	0.00 (4)	0.00 (4)	0.00
Line Rehabilitation	0.00	2.90 (5)	−2.90
Total	71.89	101.02	−29.13

NOTE:

(1) This table was adapted from the results presented in the report, "Study B Port of Churchill Additional Commodities", conducted by IBI Group, March 1986. Additional details are provided in this report, in particular chapter three. Assumes potash exported from Esterhazy to South America.
(2) From IBI report, Exhibit 3.10.
(3) From IBI report, Exhibit 4.2.
(4) No inventory required.
(5) From IBI report, Exhibit 5.3.

Table D2 Economics of Shipping Saskatchewan Potash Through the Port of Churchill (at 290,000 tonnes per year) (1)

Cost Component	Cost via Vancouver ($/tonne)	Cost via Churchill ($/tonne)	Churchill Advantage ($/tonne)
Rail Freight	34.54 (2)	25.18 (2)	9.36
Terminal Costs	4.50 (2)	10.86 (3)	−6.36
Car Costs	2.95 (2)	2.16 (2)	0.79
Ocean Freight	29.90 (2)	31.70 (2)	−1.80
Inventory	0.00 (4)	4.45 (4)	−4.45
Line Rehabilitation	0.00	2.90 (5)	−2.90
Total	71.89	77.25	−5.36

NOTE:

(1) This table was adapted from the results presented in the report, "Study B Port of Churchill Additional Commodities", conducted by IBI Group, March 1986. Additional details are provided in this report, in particular chapter three. Assumes potash exported from Esterhazy to South America (year round rail shipments to Churchill).
(2) From IBI report, Exhibit 3.10.
(3) From IBI report, Exhibit 4.2.
(4) From IBI report, page 3−39.
(5) From IBI report, Exhibit 5.3.